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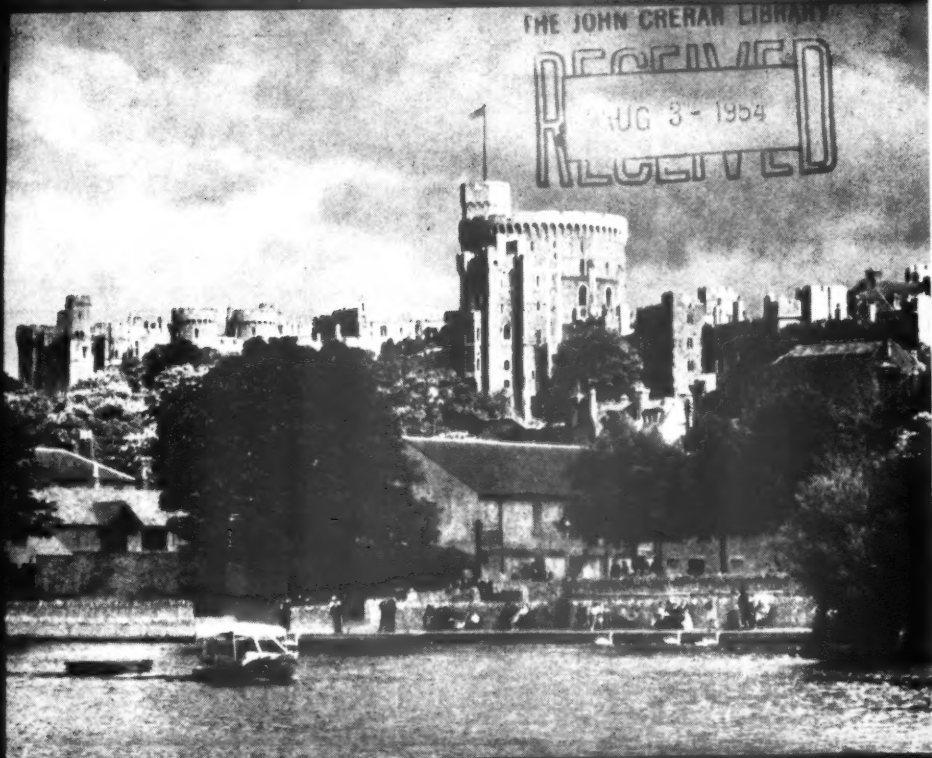
July 1954

# Agriculture

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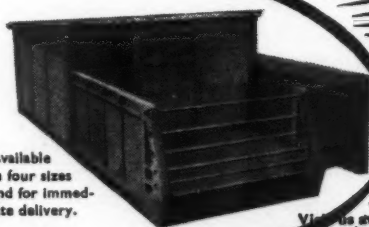
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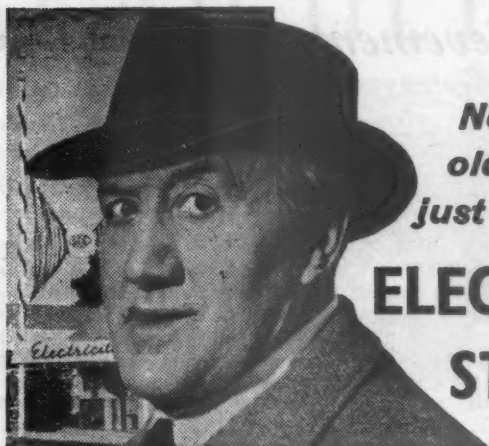
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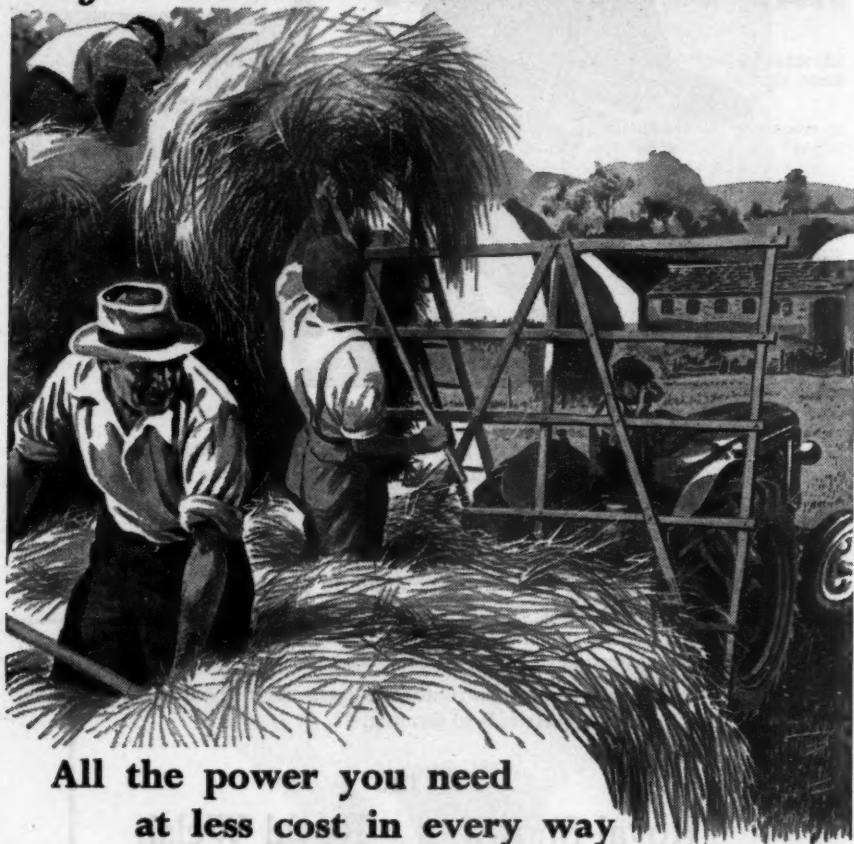
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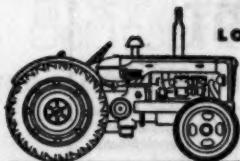


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# AGRICULTURE

THE JOURNAL OF THE MINISTRY OF AGRICULTURE

VOL. LXI

No. 4

JULY 1954

## QUALITY IN BEEF

J. S. HALL, B.Sc.

*King's College, Newcastle-upon-Tyne*

The free marketing of fatstock which comes into operation on July 1 lays an even greater emphasis on the axiom of good beef at low cost—a theme which Mr. Hall discusses from the viewpoint of suitable breeding and proper feeding and management.

**W**ITHOUT subsidies, profit in farming can only be expected from the production of food for which there is a demand, at a price the consumer can afford to pay. All available evidence suggests that with the removal of controls from meat marketing, a higher quality article, produced as cheaply as possible, will be required. Before 1939, there was a market for all grades of meat, and values emerged according to demand. In the future, a similar state of affairs will probably arise and, provided the overall prosperity of the country is reasonably maintained, more of the population are likely to buy better quality meat. Lower grades of meat will find an outlet in the processing industries.

For beef, a strong consumer preference is forecast for small, lean, tender joints. Except for some demand in the catering trade for heavier animals, the small, well-finished carcass is likely to obtain the quality premium. The control period system of grading beef cattle on a killing-out percentage basis did not discriminate quality adequately from the butcher's viewpoint. The special and super-special grades which commanded the highest price frequently provided undesirable butchers' carcasses, since such grades were excessively fat, especially with older animals. An animal with a dressing-out percentage of 57–58 per cent is a better butcher's beast. In 1939 the Smithfield market demanded a 600 lb. carcass, containing 15 per cent bone, 30 per cent fat and a dressing-out percentage of 57 per cent, from a live weight of 9½ cwt., which was comparable with good Argentine beef. Carcasses approaching this specification will be favoured again in future.

Seasonal supply and demand is a further factor affecting market price; unless imports are carefully arranged to secure a satisfactory flow of supplies, a shortage of home-produced beef in wintertime will, of course, lead to higher prices. There will undoubtedly be competition from imports for the quality trade. Maintaining a regular, all-the-year-round supply of a uniformly good product is one way of meeting such competition. Hence a considerable increase in winter production is desirable.

## QUALITY IN BEEF

The production of high quality beef is dependent on: (1) the breeding of a suitable animal possessing the inherent potentialities for the production of a desirable carcass; and (2) proper feeding and management to promote the maximum expression of these hereditary beef qualities.

**Breeding** The modern demand for lightweight carcasses has increased the urgency for adding fat early in the life of the animal. This can be accomplished only by improved breeding and proper feeding. The dairy farmer should concentrate on breeding for milk production, so that any rise in the quality of cow beef must come from better feeding. For best quality beef, animals from the pure beef breeds and their crosses must be used. The commercial feeder cannot afford to neglect rate of growth and, although pure-bred beef cattle are best for fattening at a young age, the ordinary feeder will prefer an animal by a beef bull out of a dual-purpose or cross-bred cow. Selection for early maturity has undoubtedly led to a reduction in size, and some strains within pure beef breeds can be severely criticized on this score. By cross-breeding, compensatory matings can be made and different environmental conditions exploited to the full.

The breeding policy in pure herds, however, is of fundamental importance, as it is the sire which stamps the desirable features into the store animal. The pure breeder should select for carcass quality, together with the ability to finish readily at a young age consistent with good growth. A carcass with a high proportion of loin and hindquarters is most valuable, and breeders should concentrate on lengthening and broadening the animal in this region. It is also important to select for thick, short bones, which give a blocky joint. That fine bone is associated with high quality in meat animals is a popular misconception—the reverse is actually the case. The blockiness of the highly improved meat animal has been secured by a shortening and thickening of the bones—short, thick bone can be surrounded by deeper muscles. Small, quick-growing, early-maturing breeds give finer-grained, more tender meat. The Argentine chiller carcass of 600 lb. is killed at an average age of 23 months. The British 600 lb. carcass (live weight  $9\frac{1}{2}$  cwt.), varies in age from 24 to 36 months, or even more with cattle of the later-maturing breeds. Older slaughter age is inevitable in Britain, where cattle must normally be reared on a lower plane of nutrition, frequently reaching 700–800 lb. dead weight before reaching a marketable finish.

Since animals must suit conditions, there is a place for many breeds and crosses in this country. The writer is more familiar with conditions in the north of England and in Scotland. Here, the feeder on the best land now prefers good quality, home-bred store cattle. In the finest feeding areas before 1939, Aberdeen-Angus crosses were mostly used for the prime-quality trade. For example, at Belford Auction Mart, which catered for the specialist summer production from north-east Northumberland feeding pastures, the most popular animal for feeding was the black, polled Aberdeen-Angus cross heifer (out of a Shorthorn cow); this beast was finished off grass at 24–30 months old, weighing  $8\frac{1}{2}$ –10 cwt. During the last war, when heavier cattle were in greater demand, Herefords and their crosses became more popular: the Hereford is undoubtedly a good, kindly feeder, particularly suited to grass fattening. Great credit is due to Hereford breeders for improving their strains towards earlier maturity, blockiness and capacity to finish well at good weights.

For the future, there is undoubtedly a place for good cattle of all the major breeds. On higher land, the Galloway, Highland, and their crosses,

## QUALITY IN BEEF

particularly by the Shorthorn bull, are the basis of breeding stocks. In the north, the Aberdeen-Angus bull is once again most in demand for crossing on to dual-purpose cows and first crosses from pure hill breeds. Good quality Irish stores, out of the "framey" Irish cow, have still a substantial part to play in providing suitable animals for quality beef production.

**Feeding** To obtain the maximum expression of beef qualities, it is essential to pay attention to good feeding for normal and *uninterrupted* growth. A lot of valuable information is now being published from rearing experiments at the Cambridge University Farm. Brookes (1) maintains that one of the chief conclusions so far is that nutrition during the calf stage (up to 8-9 months) influences development of the animal throughout its life. Experiments at the South African Research Institute also indicate that nutritional deficiencies early in life not only retard growth during the period of malnutrition, but may permanently affect the development of the different parts of the body. Since the more valuable cuts are primarily associated with the later developing regions of the body (that is, fullness of loin, hind-quarters and width of body), the detrimental effects of seasonal nutritional depressions associated with our winter months are frequently seen in British beef animals. Furthermore, each successive famine increases the connective tissue between the muscle tissues, resulting in tough meat. Because of semi-starvation in winter, a lack of width in body and, more particularly, absence of fleshing over the loins and hindquarters, is frequently found in stock reared on the higher lying farms, where there is little or no arable land and where only hay is fed. Such periodic famines, however, have less effect on the smaller and later-maturing crosses from hill breeds.

The practical solution to this problem lies in better winter feeding, even to the extent of supplementing the diet (within economic limits) with protein concentrates. Undoubtedly one of the biggest advantages that Ireland possesses in raising store cattle is a good growth of grass during most of the winter. Animals, whether wintered inside or outside, should not be allowed to lose condition in the autumn after a good summer on grass.

**Fattening** Fat growth is most quickly and economically produced after bone and muscle development are past their peak. Obviously, then, a very high level of nutrition is required to obtain an adequate degree of finish at 15 months old for baby beef. Such production needs early-maturing breeds. In practice, there are many advantages in finishing bigger, older animals at heavy weights, as producers have been encouraged to do during the past fifteen years. The old animal fattens easier on less expensive food, and can use roughages and by-products from arable systems. If well finished, it may have a better dressing percentage, the joint wastes less on cooking and the meat has a better flavour. On the other hand, the consumer will want small, lean, more tender joints. With proper feeding, an animal finished at a younger age will give such joints, as it is very difficult to put surplus fat on a young animal.

Surely this is the crux of the problem today. Cattle finished younger are likely to need more expensive food, yet we must produce as cheaply as possible to sell and compete with quality imports. Success will be attained more readily through feeding and management than through improved breeding. Even inferior bred stores with good rearing and feeding will make good quality beef. A dairy-bred steer, for example, fat at 30 months, provides as good beef as a second-cross Aberdeen-Angus steer at 42 months. Both

## QUALITY IN BEEF

tenderness of the beef and quality of conformation are improved by uninterrupted growth.

Some of the finest quality beef produced today is from suckler calves bred from cross Shorthorn cows by the Aberdeen-Angus bull. At a conference held in Perth in November 1953, one of the principal speakers claimed that both the producers' and consumers' demands would be met if management aimed at producing quality beef from cattle weighing 9-11 cwt. at 20-24 months old. To do that, cattle have to be fed properly—that is, kept growing all their lives and, above all, never allowed to lose their calf flesh. Such rearing and feeding management may be ideal, but it may not suit all conditions.

If cattle are finished earlier, the already acute problem of shortage of stores will be aggravated. There is a considerable need to use stores from all available sources, including animals bred from dual-purpose and dairy cows. In the absence of adequate supplies of store cattle, breeding and rearing may unfortunately have to continue for some time on farms better suited to fattening.

Inevitably there will be some conflict between probable market requirements and what the natural resources can produce most cheaply. To reduce costs, the beef enterprise must be fitted economically into the farming system. Prime-quality meat production should only be attempted under good lowland conditions. Nevertheless, meat from older animals fattened under second-class conditions will probably still find a ready market. Hill and marginal farmers will best contribute to the national need by breeding and rearing rather than feeding. At all stages, feed costs must be kept as low as possible—profit will not follow if the article is produced too expensively.

**Summer Feeding** Lowland areas can roughly be classed into those best suited to growing grass and those most fitted for arable cropping. Where good grass can be grown cheaply, the best beef will be obtained most economically by utilizing such grass to the best advantage. Here again, however, there is the practical problem that first-quality grass, especially productive, young, temporary grass, is more suitable for finishing older cattle. In certain areas in the north of England, for example, progressive farmers have suggested that the problems associated with adequately finishing younger cattle on grass should be investigated scientifically. It is recognized, however, that heifers will finish more readily on grass than will bullocks. For best-quality beef from grass, therefore, suitably bred and well reared heifers should be slaughtered off grass at not later than 30 months old. Bullocks born at the same time, instead of being carried over for finishing off grass a year later, could be stall- or yard-fattened. A saving of at least six months would then be made on the time required to feed them. Suckled calves, suitably managed and wintered well during their first winter, can produce superb quality meat at 18-24 months old.

Fraser (2) has strongly advocated the provision of cold storage facilities, so that all animals can be fattened on grass and winter meat requirements supplied from refrigerated stocks. Provided the erection and maintenance of cold storage plant is less expensive than winter feeding, this is undoubtedly in the national interest. However, such facilities are not likely to be available in the immediate future. There would therefore seem to be a place for a certain amount of winter feeding.

## QUALITY IN BEEF

With regard to fattening on grass itself, there is plenty of scope for applying modern techniques to achieve more intensive production and utilization. Knowledge concerning the utilization of intensively grown grass by beef cattle is not so complete as that for dairy cattle. The limited available experience of modern grassland techniques suggests that output per acre can be increased, though rates of gain and degrees of finish of individual animals are not improved. The possibilities for higher output per acre from grassland are enormous in this country.

**Winter Fattening** During the last fifteen years, only individual feeders whose skill in buying and feeding is greater than average have made profit from winter feeding. The position in the future is going to depend very definitely on how well imports can fill the season when home supplies are falling. Where cattle can be fed well and cheaply in wintertime, there will be scope for some expansion. Such may well be the case in some of the better arable areas, where cheap supplies of home-grown foods and by-products of the arable rotation are available. The feeding of quality beef on the arable farm needs an adequate level of concentrate feeding, as well as good quality roughages. Good hay is just as important to store and fattening beef cattle as to dairy cows, although the tendency with modern haymaking methods is to lower quality.

In store-rearing areas with unfavourable haymaking weather, it may be that ensilage is a better method of conservation. But here again, the relative values for wintering store cattle of (a) ensilage and (b) roots and hay, are not clearly known. Experiments do suggest that comparable liveweight gains are always obtained when silage is of suitable quality. Some of the most experienced fattening farmers in the north of England, however, are prejudiced against store cattle wintered on grass silage, maintaining that such cattle do not thrive so well the following summer on grass.

This view is not in accordance with results from experiments at Aberdeen, reported by Dodsworth (<sup>1</sup>), which indicate that silage can efficiently replace swedes for winter fattening. Under their farming conditions it is suggested that where a yield of less than 16 tons per acre of roots is obtained, a greater output per acre results from silage feeding. These results can only be applied to the conditions under which they are conducted, but there are feeders over a wide area who have fed silage for some time, and it is apparent that cattle can be adequately finished on a ration containing grass silage alone.

More experimental work on the use of silage for beef production appears to be urgently needed. Three years ago a trial was carried out under the writer's supervision on a feeding farm at Darlington, Co. Durham, reported by Mavin (<sup>4</sup>). Here, two groups of cattle were fed, one on hay, roots and home-grown concentrates, and the other on silage alone. The two groups made similar liveweight gains, and graders were unable to distinguish between them, either on the hoof or on the hook. Experience gained from this trial and other sources suggests that best results are obtained when the grass silage is of first quality and the animals are not overloaded with additional roughage. For this reason, silage feeding does not readily fit into our traditional arable systems, where roots, sugar beet tops, etc., can be fed along with roughage from the cash crops.

**Handling Meat** Distributing and marketing organizations, as well as producers, have a considerable responsibility regarding the quality beef trade. In this country, slaughtering and marketing facilities are greatly in need of modernization. More attractive meat could be

## QUALITY IN BEEF

offered to housewives by improvements in slaughtering, conditioning and handling at all stages. Most home-produced beef, and especially carcasses from older animals, would be improved by longer conditioning. At present, most of it is eaten too soon after slaughter. An extra week's hanging would improve tenderness and juiciness, and although conditioned beef loses its brightness, consumers could soon be educated to it. There is little use in producers providing a quality article if it is handled inefficiently later on.

### References

1. Beef Production Experiment at Cambridge. A. J. BROOKES and L. S. VINCETT. *J.R. agric. Soc.*, 1950, 3, 99-118.
2. The State of Animal Husbandry. ALLAN FRASER. *Farms' Wkly.*, May 15, 1953, 38, No. 2, 71.
3. Studies on the Productivity of First Year Ley Grass when cut at Different Stages of Growth, ensiled and fed to Beef Cattle. T. L. DODSWORTH and W. H. McK. CAMPBELL. *J. Brit. Grassl. Soc.*, 1952, 7, No. 4, 151-9
4. Some Observations on the Winter Fattening of Bullocks on Grass Silage. A. C. MAVIN. Unpublished thesis, University of Durham, 1952.

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W. R. DIXON, N.D.A.

*National Agricultural Advisory Service, South-Eastern Province*

The large farms on the chalky soils of the Berkshire downland are mainly given over to cereal growing. But on Rowles Farm—a 1,400 acre holding at West Ilsley—livestock rearing, based on home-grown feedingstuffs, forms an important and successful part of the farming programme.

MANY visitors to this year's Royal Show will travel to Windsor from London and, if they are strangers to Berkshire, they may well be forgiven for leaving with the impression of a heavily wooded low-land county. The same applies to visitors from the west, except that, since they will see more of the county, they will probably remember the residential areas and medium to small farms as well. But Berkshire, rather more than other counties, has a tremendous diversity of farming types, and there is an area of about 100 square miles of chalk downland in the very heart of it. In this roughly triangular area, with points at Ashbury, Streatly, and Hungerford, are the really large farms.

Here in this open, undulating country are to be found most of the soil types associated with the chalk formations, from the black, puffy, flinty Icknield series to the warm coloured and stiffer clay with flints. The highest point on the Ridgeway (a track on the high land from Wiltshire to Oxfordshire) is 856 feet, but on average the higher land is between 600 and 700 feet above sea level, and the valleys between—unfortunately dry—are seldom below the 400 feet contour. Most of the farmsteads are in the villages themselves; comparatively few are in open country. Various barns are dotted about in the uninhabited land between villages, and some, departing from the descriptive New, Hill, and Starveall, have such romantic names as Trundledown, Banterwick, Millmill, and Moonlight. Those who farm this land are perhaps rather more fortunate than they would admit, and although their land is inherently much poorer than that of the valleys,

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potash and the combine drill have helped to lessen this difference, leaving the downland farmer in the position of being able to outwinter stock without fear of poaching, and often to finish corn drilling before the lowland farmer has been able to prepare his land.

This is predominantly a cereal-growing area, where 1,000 acre farms are common and nearly all are mechanized for grain production. Barley is undoubtedly the main crop, but more and more Ayle spring wheat is being grown, and the traditional malting barleys are to some extent being replaced by the dual-purpose, or feeding, types. Generally speaking, the arable-grass ratio on these farms is about 2 : 1, but variations do exist. As yet, Cereal Root celtworm is only a faint cloud on the horizon.

**The Farm Plan** Rowles Farm, West Ilsley, is part of the Lockinge Estates, and has been farmed by Mr. Norman Hinds since the land in hand was reduced by some 6,000 acres in March 1947. On taking over, Mr. Hinds adopted a ley farming system, which necessitated considerable new fencing, since about half of the farm was open land interspersed with the inevitable training gallops which are as much a part of Berkshire as the Downs themselves. The farm comprises 1,400 acres, and the soil is mostly of the poorer Icknield and Upton series, there being comparatively little clay with flints. Odd portions of unploughable bits of land, which never look as steep and difficult as they really are, bring down the actual acreage in crops and grass to 1,350: of this, some 720 acres are in leys, 550 in cereals, and the remainder in roots and kale to provide winter keep for the sheep. Leys are purposely placed first, as they are the hub around which the whole farming system revolves, and it is only right that they should take pride of place in any description of the farm. It is a maxim of Mr. Hinds that these leys shall be well done, fully stocked, and ploughed out while still in their prime.

The rotation adopted fits in with the farming system and consists roughly of two years of cereals and a three-year ley, but considerations such as the provision of shelter and water (often the actual volume of water available) are of such importance in this type of open country that it is virtually impossible to keep to a plan in which leys follow the arable in a circular motion round the farm. Some fields have to be left to allow access to shelter or water, but the annual provision of some 120 acres of summer and winter sheep feed enables changes to be made without seriously interfering with the overall plan. Even now, there are no more than 70 acres of ley which have been down for more than three years. Field sizes are worthy of note; 30-40 acres is considered to be quite large enough.

All leys are of the general-purpose type and are undersown in the second straw crop, which is always barley. After drilling and harrowing the barley, the seeds are broadcast and the land is re-harrowed and rolled. There have been no failures with this method. Once established, the leys are dressed every year with 4 cwt. complete fertilizer and top dressed with nitrogen as required. Thereafter, they are well stocked, and the heavy concentration of stock for short periods produces the same effect as block grazing. Mr. Hinds experimented with gang mowers last year, with the result that he intends to mow all the leys in future. Hay is usually taken in the last year of the ley to stimulate root development, and the lattermaths are stocked until well into the next year before being ploughed out.

Of the cereals, only 50-60 acres are winter-sown, mainly to provide mixtures for summer folding with sheep. Some 400 acres of barley, 70 acres of wheat and 30 acres of oats are spring-sown, so avoiding winter depredations by hares. Spring wheat is generally taken after the leys on the better

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land. The variety chosen is invariably Atle. The barleys are all the higher yielding varieties, and over the last three years the farm has produced an average of 15 sacks per acre of wheat and barley. All cereals are combine drilled with 3 cwt. No. 1 compound fertilizer, and barley has an additional 1 cwt. muriate of potash. Wheat is also top dressed late, often with as much as 3 cwt. "Nitro-Chalk" per acre.

In Mr. Hinds's opinion it is impossible to attach too much importance to cultivations, and it is worth recording that at one time there were two 20-coulter combine drills in use on the farm; one was disposed of when it was found that the cultivations were being rushed out of the way of the drilling. Rotary hoes have proved their worth, especially for reclaiming old downland. In this work the machine is used in early spring and the running bent grass is brought to the surface and moved about until it is killed.

Bail milking was carried on until 1951, but it was discontinued because Mr. Hinds felt that the sort of cows which he liked to see on the farm were too costly for this type of milk production and worthy of more individual attention than is possible under this system. The farm is not equipped for any more intensive method.

**The Stock Side** The main cattle policy is rearing, and to some extent it follows a practice which took the place of arable sheep on downland farms. On Rowles Farm it has been enlarged to the proportions of a main enterprise. Some 60-70 Friesian and Dairy Shorthorn calves are bought each year and reared by multiple suckling on eight nurse cows and odd heifers which calve out of turn. The first batch of calves are put on the nurse cows in the autumn, at the rate of four per cow. They are suckled for three months but remain in the yards until the following May, when they are turned out. Their subsequent life is an outdoor one, due precautions being taken against husk. A similar batch follow the first group on the cows for a further three months, and these, together with the third batch of about two calves, remain in yards until the following spring. All calves are thus housed for their first winter, so that at any one time roughly one-third of the stock is in yards. Whilst in the yards these cattle receive little after weaning beyond silage, hay and crushed cereals.

Yearlings are wintered on the leys due for ploughing out and have supplementary feeding, but the bulling heifers, which have been increased by buying in to a total of 120, are wintered on specially prepared foggage. A ley in its second year is grazed until August, when it is heavily top dressed and shut up until January. By this time, the lattermaths are mainly used up, and the heifers and Aberdeen-Angus bulls are taken to the foggage. A remarkable growth is obtained, and so satisfied are the stock with this feed that hay is refused. These leys not only winter the heifers but produce an early bite before being shut up for hay. A beef breeding unit of twenty-seven Aberdeen-Angus cows, half of which are pedigree, has been introduced, and Mr. Hinds is confident that he can increase the number to fifty without reducing the present rearing policy.

The sheep consist of a flock of 320 ewes, the kind of ewe favoured by Mr. Hinds being the broken-faced Suffolk  $\times$  Scotch Half-bred. These ewes are mated back to Suffolk rams and produce lambing averages of about 1½ per ewe. Two hundred tegs are retained each year, but it is proposed in future to increase the breeding flock to 400 and cut down on the teg wintering. The system with sheep, starting in the autumn, is for the ewes to follow the tegs on the roots. The tegs are marketed and the ewes go to the leys where

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they lamb, and from then on help to keep down the spring growth. They are hurdled in summer on autumn-sown arable mixtures and lattermath of the occasional one-year clover ley from which silage is made. When this is consumed, the flock ranges on stubbles and leys, before returning to the roots for flushing.

A pig unit of 30 pedigree Wessex sows is maintained outdoors on the leys. Most of the gilts are brought out for crossing with a Large White boar, and are then sold in-pig. Since the inside accommodation is so limited, the hogs are mainly sold as stores. A flock of 1,500 Rhode Island Red laying birds are kept, half in a battery and half on the semi-intensive, outdoor system. In autumn the movable houses, which each take one hundred birds, are formed into a wall against the north winds in as much of a sheltered position as can be found on the grass available. A yard is constructed of straw bales to provide the shelter so important to the laying bird, but continual free range of grass is offered. The following April the houses are moved out to fresh ground. Pullet replacements are bought as day-old chicks, and kept inside until they are sufficiently hardy to go out on the leys.

In his own words, Mr. Hinds is a farmer and not a dealer, and marketing is mainly done at home. An annual stock sale is held about the end of September; attested down-calving heifers, lambs and in-pig gilts are the main attraction. The stock is usually in great demand and fetches good prices.

**Good Production Figures** The labour strength consists of ten men (one of them an old age pensioner), a boy, a poultry girl and a pupil. If more cottages were available, there is no doubt that they would be fully used. Power is provided by one crawler, four large diesel, two medium and two small tractors. Three 12-foot combine harvesters are used, and although to outward appearances this may appear excessive, Mr. Hinds will assure you that the best grain drier he has ever operated is this extra combine. By having the additional power, he can wait until the grain is at its driest, which often means well after midday, and then the three combines can set to work and eat up the corn. A grain drier is installed, and ventilated storage for 4,000 sacks was put in by Mr. Hinds some four years ago.

Leaving aside the pig and poultry enterprises, except to remark that some 20-30 acres are used by these stock each year, calculations show that, on average, 340 productive animal units (cow-equivalents) are being carried entirely on leys, forage and cereal crops from 820 acres. This gives a figure of 2.4 acres per livestock unit, which is more in keeping with intensive dairy farming on really good land. This is confirmed by the fact that a figure of £40 per acre gross output has been reached which, looked at from production per man standards, is even more satisfactory.

This then is a pen portrait of Rowles Farm, West Ilsley. It may not be absolutely typical of the farming of the Berkshire Downs, but it does perhaps indicate a system of farming to which many farmers may change in the years to come.

## GOOD ESTATE MANAGEMENT

### THE ENGLEFIELD ESTATE

H. CARTWRIGHT, M.A., F.R.I.C.S., F.L.A.S.

*Agricultural Land Service, South-Eastern Province*

There is nothing particularly novel or spectacular about the 14,000-acre Englefield Estate, but in its solid and efficient achievement it follows in the true tradition of English agricultural estates, providing at the same time a noteworthy example of the landlord-and-tenant system at its best.

**W**ITH the Royal Show at Windsor this year, it seems appropriate to take a look at one of the best-known Berkshire estates—that of Mr. H. A. Benyon, the Lord Lieutenant of Berkshire and Deputy President of the R.A.S.E. The Englefield Estate comprises about 14,000 acres and is situated south-west and west of Reading, part of it extending over the Hampshire border round Mortimer West End and Pamber. The northern part, surrounding Englefield House and Park, lies between the rivers Pang and Kennet, and visitors travelling along the Bath Road pass through it about 6 miles west of Reading. The high ridge forming the watershed between these river valleys is a mixed soil, mainly on gravel, and is heavily wooded, but its lower south-eastern slopes and much of the land stretching down towards the Kennet provide a valuable tract of good soil on the valley gravel.

South of the Kennet, the ground soon rises towards Upton Nervet and Padworth, and the character of the country changes to a wooded heathland on the plateau gravel. Most of this part of the estate is woodland and lies above the 300 feet contour. Continuing southwards, we come to the most southerly part of the estate, consisting mainly of Pamber Forest near Tadley in Hampshire. This is a heavier soil and grows good oak. Finally, east of Mortimer West End lies an area of undulating farm land, including numerous small woods, which extends eastwards to Stratfield Mortimer and the borders of Stratfield Saye. This eastern side of the estate, which is mainly on London Clay but partly on valley gravel, stretches up to the southern outskirts of Reading on the Basingstoke Road, and includes some good farms around Grazeley and Burghfield.

The original Englefield Estate has been in Mr. Benyon's family since 1745, though much of the present property has been added since that date. A large number of the farmhouses, cottages and farm buildings were built by Mr. Richard Benyon, who died in 1897. They bear witness to the many improvements carried out by this owner, who, not content with new farmhouses and substantial farm buildings, even built churches and schools for several parishes on the estate! His love of good buildings was evidently inherited by his nephew and his great nephew (the present owner), who continued the work of improvement.

**The Farms in Hand** Altogether, about 1,800 acres of the estate are farmed in hand. This area, which includes Englefield Park and four large farms known as Mile House, Lambdens, Mayridge, and Chalkpit, forms a compact block in the most northerly part of the estate. The greater part of the land is sheltered from the north-west by a high, wooded ridge, and it slopes gently south-east towards the Kennet. Most of it is arable and, although overlying gravel, it is a good, productive soil easily-worked. All the farms in hand are attested.

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The farming policies at Mile House and Mayridge Farms are similar: together they form the home of the pedigree Red Poll herd, about 45 cows being milked at each farm. All the followers for the two milking herds are reared on these farms, as well as some bulls and a few heifers sold for breeding. The object is to maintain the dual-purpose character of the breed. The herd average over the past three years has been 878 gallons per year at 3.77 per cent butterfat content.

In addition to the Red Poll herd, a pedigree Hampshire Down ram breeding flock is kept at Mile House and Mayridge, and also at Lambdens Farm. This flock is, of course, well known and has been registered since 1913. Some rams from the flock, and occasionally a few ewes, are exported every year. It is interesting to note that these sheep are still hurdled on arable crops.

At Chalkpit Farm there is a pedigree herd of about thirty Guernsey milking cows and their followers. However, the main function of this farm is the production of beef cattle, and for this purpose over sixty Aberdeen-Angus cross-bred cows and their followers are kept. The cows calve in the open and the calves, sired by pure-bred Aberdeen-Angus bulls, run with the cows for about eight months and are usually ready for sale at 24-27 months. They are fed entirely on home-produced food.

Lambdens Farm is the home of the pedigree herd of Large White pigs: 25-30 breeding sows are kept and a considerable number of their progeny are sold for breeding. Recently, a number have been exported to Yugoslavia. The well-designed adaptation of an existing range of buildings has provided fattening pens, and farrowing pens with exercise yards. In these indoor pens the young pigs have the benefit of infra-red lamps over the creepers. After about a week they are put outside in estate-made, wooden arks, and thereafter they are reared in the open. The breeding gilts and sows are kept in semi-covered yards originally designed for cattle—one example of the many uses to which this type of fixed equipment can be put.

Apart from the livestock on these farms in hand, about 200 acres of wheat are grown for sale, while a good deal of other corn is produced for feeding the animals. The corn is combined, and centralized corn storage and a drier have been provided in some existing buildings at Mayridge Farm. Leys, kale and roots are grown in rotation.

**The Farms Let** In the long run, the character of the land tends to determine not only the type of farming practised in a district, but also the kind of farmer. The greater part of this estate is made up of fairly large, well-equipped holdings on gravelly loam or clay-loam soils. A combination over a long period of good soil, good fixed equipment and good estate management has therefore resulted in the majority of the farms being occupied by a very substantial and progressive type of tenant. Great care is taken in the selection of tenants and, in the few cases where changes take place, tenants' sons often succeed their fathers. There is a high degree of confidence, mutual respect and understanding between the estate and the tenant farmers, and generally a high standard of farming is maintained.

In all there are fifty tenant farms; the majority of these are between 200 and 300 acres, but about ten of the larger farms exceed 300 acres. Mixed farming is the general rule, with a dairy herd as the main feature on nearly all of them; but there is a fair proportion of traditionally arable land and ley farming is now becoming general. Improvements to the milking accommodation to bring it up to the standard now required have progressed steadily

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and the few farms where the buildings do not comply with the regulations are being dealt with. Nearly all the farms carry attested herds. A number of well-planned adaptations of existing buildings, with additions where necessary, have been carried out. In some cases the decision has been to change from the traditional cowshed to a milking parlour and yards, the old cowshed being used as a shelter for the cows, or for calf- or pig-pens. A number of the larger farms now have grain drying and storage facilities, which have been installed by agreement between estate and tenant.

As regards repairs, the estate form of tenancy agreement makes the tenant responsible for half the cost of all labour and materials, excluding main walls and roofs. The standard of maintenance is good.

A very conservative policy has been followed with regard to farm rents, which have shown very little material variation over the past sixty years, except in cases of post-war re-lettings. Where improvements are carried out on a farm, the tenant is expected to contribute to the cost, either by sharing the initial outlay with the estate or by paying a moderate rate of interest on the cost. In certain cases the work has been treated as a tenant's improvement, the tenant bearing the whole of the initial cost, subject to the right to claim compensation on quitting. Specialized improvements, such as the provision of grain storage, are usually the subject of a special agreement with the tenant, in which the compensation is based on a sliding scale of depreciation dependent on the agreed life of the improvement.

**The Woodlands and the Estate Yard** Of the 3,000 acres of woods on the estate, about two-thirds lie mainly on the plateau gravel, including particularly the large area of about 1,500 acres on the gravelly heathland stretching from Ufton Nervet southwards across the Hampshire border to Silchester Common. This area is well suited for softwoods. Scots and Corsican pine, Douglas fir, Norway spruce, and Japanese larch are grown. There are some particularly good stands of the last-mentioned on some of the sheltered slopes.

Further south on heavier land is Pamber Forest (470 acres), which is mainly growing oak over coppice. Many of the smaller woods in other parts of the estate are also chiefly under mixed hardwoods over coppice, in which oak will be the final crop. Of the total area of woods, about one-third is hardwoods (mainly oak), and two-thirds are softwoods. The working plan is designed to make good the heavy fellings of the war years. The present rate of new planting is about 8 acres a year. Scots pine is spreading rapidly by natural regeneration on many of the areas felled during the war.

The woods are an important part of the estate economy, as they supply the whole of the timber required for use on the property. Since the war, the policy has been to fell only what is required for use on the estate, and the only sales to merchants have been in respect of unwanted converted timber.

The Agent directly controls the management of the woods, and there is no Head Forester. The woods staff is organized as two squads, each of six to eight men under a foreman, with the River Kennet dividing their respective areas.

The timber from the woods is hauled to the estate yard, where a very large horizontal saw and a band-rack saw are capable of dealing with the largest trees. The yard is well equipped with smaller saws and other wood-working machinery, all driven by electricity. There is a large joiner's shop and other workshops, a saw doctor's shop and blacksmith's shop. One of

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the most useful features is the 18 feet pressure creosoting tank, which can take long timbers for building Dutch barns, as well as lighter material such as softwood fencing stakes and gate timbers.

All the building timber, gates, fencing materials and joinery used on the estate are prepared at the yard, as is most of the ironwork. At the time of the peak demand for home-grown timber during the war, up to 8,000 cubic feet per month of converted timber was being sold from this yard. Much of the oak and elm supplied was for naval construction and was embodied in landing craft used on "D-Day".

Visitors to the "Royal" will be able to see some fine examples of the work turned out from the estate yard, not only from some of the finest timber, but also from thinnings and squarings, which are often considered to be of little value.

**Housing and Farm Buildings** There are 54 farms and 357 cottages on the estate.

About 100 of the cottages have been modernized, in some cases with the aid of grants under the Housing Acts; this work is continuing. Apart from Englefield House itself, there are five other large houses and fifteen smaller houses. The estate is still very self-contained and self-supporting in the matter of maintenance and improvements, and comparatively little work is put out to contract. Until the war, hand-made bricks and lime were produced on the estate, and some gravel is still dug. All the timber required is home-grown and converted in the estate saw mill. Much of the ironwork for farm buildings, including calf-pen railings and gates and fittings for pig-pens, etc., is fashioned by the estate blacksmiths. Three lorries provide the necessary transport.

The estate staff consists of the Resident Agent, with two clerks in the estate office, a Clerk of Works, also with an office staff of two, and forty-one tradesmen and labourers, including sawyers, carpenters, wheelwrights, blacksmiths, plumbers, bricklayers, painters, and lorry drivers. These figures do not include the sixteen woodmen.

A good standard of repair is maintained on the estate, although the inevitable run-down of work during and since the war has meant that the former programme of overhauling each farm once in seven years has had to be curtailed. All new farm buildings are erected by this estate staff, and the impression gained from seeing the buildings on the estate is one of good, solid, practical workmanship on traditional lines. There is also evidence of much good planning, technical skill and ingenuity in many of the improvements and adaptations they have carried out.

**Traditional Estate Management** It is difficult in a short article of this kind to convey the true character of this estate.

The management policy does not set out to achieve anything startling or original. There are no "frills"; nothing is merely spectacular. One does not find vast areas of new concrete, nor many ultra-modern buildings, nor gleaming tubular fittings bought from outside manufacturers. Nor, indeed, is there anything novel in the methods of estate management, which follow the best traditions of the landlord-and-tenant system. On the other hand, the more one sees of the estate, the more its solid worth impresses. Both the farms and the woods are well managed; the livestock are among the best of their breeds; and the buildings—originally very well built—have been well maintained and their modernization and adaptation have generally been soundly planned.

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More than most of its kind today, the Englefield Estate is self-supporting in materials and labour. In a typically English way, by being strictly practical and adapting and improving the fine work of earlier generations, the estate has not only built up the real wealth of the countryside but, in doing so, has added much to its beauty. Not least among its achievements is the way in which the best traditions of the English agricultural estate have been maintained, despite all the difficulties of the present time. In these days it is indeed refreshing to go about an estate which is still a living organization, and in which everyone, from the owner to the estate workman or farmworker, can and does take a justifiable interest and pride.

### PERRY

PROFESSOR B. T. P. BARKER, C.B.E., M.A.

*University of Bristol*

Although little known outside the West Country, perry, properly made and carefully selected, can be a most attractive drink, comparable in delicacy of flavour with the best of the Continental white wines. Visitors to this year's Royal Show can judge for themselves.

**D**URING the latter part of April and in early May each year the many travellers passing along the main highway to the West Country between Gloucester and Bristol can hardly fail to note in the many orchards bordering that busy thoroughfare the giant pear trees covered with blossom of purest white. But probably few of these passers-by are aware that the crops from these trees will be utilized in the following autumn to produce a beverage still comparatively unknown outside the counties of Gloucester, Hereford and Worcester, notwithstanding the superlative quality it can attain. The beverage - known as perry - is nevertheless one of the oldest fermented drinks produced in Great Britain, dating back at least to the time of the Norman Conquest.

Whether genuine perry pear trees existed in this country before Norman times is uncertain; but there can be little doubt that when some of the leading Norman barons were given estates in the West Country and Wales by their leader William the Conqueror, they settled there and planted trees of cider apples and perry pears raised in their own country, where at that time cider and perry were already established drinks. The place names in some of the perry districts confirm very definitely the establishment of Norman family settlers there.

It may appear surprising that while cider made relatively quick headway as a beverage in this country, perry has only recently begun to attract attention outside the immediate area in the counties mentioned above. There are still many people who do not know what perry is.

Probably two factors have been largely responsible in the past for the general ignorance or neglect of perry. First, even when it is made under the most careful conditions, its quality varies greatly from one brew to another: secondly, owing to certain features in the chemical composition of perry pear juices, the stability of the beverage in the past has sometimes

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been erratic. These drawbacks will be considered in more detail later in the light of modern advances resulting from recent research, which have had much to do with making perry a more satisfactory and commercially attractive product.

**A Distinctive Character** The genuine perry pears differ from eating pears in much the same way as cider apples differ from dessert or culinary apples. In most instances, the fruit is much smaller than dessert or stewing pears, and nearly always the texture of the flesh renders perry pears more or less inedible, the flesh being hard and very gritty.

There are many varieties, differing considerably in flavour, although all possess to some degree a definite "pear" character, more or less marked according to the variety concerned. While some varieties normally have a higher acidity than others, the range of difference in this respect is not as striking as with cider apples: few pears have as low an acid content as the numerous cider apples which constitute the sweet and bitter-sweet classes of cider fruit. On the other hand, the degree of acidity of perry pear varieties is subject to wider fluctuations from year to year; it is more susceptible to seasonal influences than most cider apples.

Another characteristic flavour feature associated with perry pears is an astringency which, while barely perceptible to the palate in some varieties, is so intense in others – when the weather during the growth of the fruit has been particularly favourable to its development – that the resultant perry is practically undrinkable. In its influence on the character of the beverage, this astringency in the pear is analogous to that of the bitter-sweet "tannin" of the cider apple. Although the chemical substances concerned are not identical, it is customary, in the absence of more precise knowledge of their composition, to refer to both as "tannin". The particular point of interest here may be the difference in the colour of perry and cider. Typical perry is either almost colourless or has a pale straw tint: ciders normally range from amber to deep brown – the result of oxidation of their "tannin" in the course of the cider-making process.

The marked influence of weather on the composition of perry pears already indicated makes it difficult to classify them into clear-cut groups. Consequently, unlike cider fruit, it is almost impossible to generalize as to suitable blending of individual varieties to produce a drink of a standardized, well-balanced palatability. The perry-maker, therefore, is faced in most years with blending problems by no means easily solved. On the other hand, occasionally (and especially in good vintage years) he may discover in his cellar a series of high-grade perries so well balanced in flavour as to require no blending whatever.

To reach its peak quality, the perry pear appears to need more sunshine and warmth than are experienced in an average English summer. Juice quality suffers in accordance with deficiencies in those respects. A favourable summer conduces to a high sugar content, a slow rate of fermentation of the juice, and a notable enhancement of the delicate "pear" flavour, which is the hallmark of vintage merit.

**The Best Varieties** Many varieties of perry pears are to be found in the West Country. Little definite knowledge of most of them is available, and the number of well-known kinds extensively grown is very small. The trees of the various varieties differ widely in size and vigour of growth, some being as large as forest trees and others no bigger than a medium-sized cider apple tree. The larger trees live to a great age; there is

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one instance on record of trees of the Barland variety, planted in the reign of Queen Anne, still flourishing and yielding crops in 1897. A photograph of two of them taken in the latter year shows their size to be on a par with a full-grown oak or elm.

Space will not permit of more than a brief reference to a few of the better known of the present-day varieties. Among these, Oldfield, a mid-season variety, must be given pride of place: it is as pre-eminent amongst English perry pears as Kingston Black is among cider apples. Like the latter, it has one weakness – an inclination to canker in some localities. It produces a medium-sized tree of fairly good cropping capacity. In favourable seasons it yields a perry of outstanding quality, the fermentation of the juice being slow and the natural sweetness readily retained by filtration. The flavour is well balanced in respect of acidity and astringency, and consequently blending is unnecessary, except in unfavourable seasons.

Taynton Squash, a famous old variety of Gloucestershire origin, producing huge trees of great cropping capacity, has long borne a high reputation for vintage merit: in fact, some perry experts have ranked it above Oldfield. Its great drawback is its early ripening, being about the first of all to be ready for milling. Consequently, as a September-ripening fruit, it reaches milling condition very quickly and soon becomes over-ripe if stored even for a few days after harvesting. Its perry quality then deteriorates heavily. At its best it yields a drink of distinctive flavour, the liquor tending to be a trifle deeper in colour than is usual for a perry.

The Barland pear, already mentioned for the tree's longevity, is a heavy cropper and ripens shortly after Taynton Squash; its perry is full-bodied and in character resembles cider a little. The Butt variety is one of the most valuable of all, although it normally yields a perry much too astringent to drink alone; it possesses, however, a fullness of other flavour features which, when appropriately blended with a less astringent type, can give a first-rate product. Its trees are large and very hardy and they crop well. Its milling season is from late November onwards. Very similar to the Butt is the Rock pear, which in respect of its juice quality is a more concentrated variant; its juice is particularly remarkable for producing a dense milkiness when blended with juices of other varieties.

Other varieties commonly occurring are the Huffcaps, Holmer, Blakeney Red and Moorcroft: the last two provide larger fruit than most other varieties, but they are generally of lower vintage merit than the smaller pears.

**Making Perry** In general outline perry-making follows the same course as cider-making. Certain special features must, however, be taken into account. Thus particular care is necessary to ensure that the pears are milled when they are as nearly as possible at the peak of vintage ripeness. This requires much closer attention than with cider fruit, for it is a well-known fact that the ultimate final stage of ripening occurs relatively quicker and is of short duration. Similarly, over-ripening, accompanied by the discoloration and breakdown of the internal tissues of the fruit, follows on very quickly. The inherent standard of quality of the resulting perry depends upon how near to the critical point of ripeness the fruit has been allowed to get by the milling date. The earlier-ripening varieties in particular need very careful watching, because the ripening cycle proceeds faster than with the varieties which normally come to maturity from mid-November onwards.

Immediate expression of the juice from the milled pulp is desirable: otherwise there is some risk of staleness in the natural flavour and of taints being picked up from the surroundings – the pear being a sensitive fruit in

those respects. If a *dry* perry is desired, the general practice is to leave the juice to come into fermentation naturally and to proceed to completion. For sweet perries, however, fermentation is checked at the appropriate stage by filtration of the liquor, or by other means. In years of high vintage quality it is not uncommon for some juices to yield naturally sweet beverages without any special treatments, fermentation coming to an end prematurely owing to the juices concerned being deficient in certain constituents essential for yeast growth. While incomplete fermentation of this type also occurs occasionally in the juices of cider apples, with perry pears it tends to be more frequent and also more pronounced. The resulting product from such juices is a more or less sweet perry of superior flavour: the best examples are so refined and delicate in this respect that they can compare favourably with high-grade Continental white wines, even although they are generally lower in alcoholic content.

Possibly the outstanding difficulty in perry production is the occasional appearance of a more or less dense haze or, alternatively, of a heavy disfiguring deposit, at some time in the life of the liquor. This may occur soon after the expression of the juice or at a later stage, occasionally even after the final product has been in bottle for months. A simple method of preventing this trouble without appreciable detriment to flavour has now been discovered. It involves treating the freshly expressed juice with a small amount of sulphur dioxide. This former serious handicap of instability of perry as a commercial product having been overcome, a promising future for this very attractive beverage seems in prospect.

**Laying down Vintage Stocks** From the foregoing it will be noted that perry is normally a drink of an individual character, lacking the more positive and robust flavour of cider, but instead – and especially in the higher grades of the beverage – possessing a delicacy which puts it in the class of some of the lighter white wines. Some of the inferior varieties of perry pears yield a coarser type of drink, the flavour of which is often suggestive of an indifferent cider. Probably the greater part of the annual pear crop is at present utilized in combination with cider apples for cider-making, either in the form of fruit, juice or fermented liquor. In these mixtures the pear flavour is obscured by the more marked apple character.

Thus it would appear that if perry is to become widely known, a demand must be created by means of the superior products of good vintage years. Fortunately, this does not present a very serious problem. Perries of that grade, unlike most ciders, improve in bottle as they age; in one outstanding instance at the Long Ashton Research Station an Oldfield perry bottled in 1908 continued to improve in quality year by year until the stock was exhausted over twenty years later. Hence, the laying down of bottled stocks of perries of vintage grade should go far to ensure that continuous supplies of a higher order of quality could be maintained to meet the increased demand which may confidently be expected as the merits of perry become more widely appreciated.

## CHERRY GROWING IN KENT

W. G. KENT, N.D.H.

*National Agricultural Advisory Service, South-Eastern Province*

Soil, climate and situation have all combined to make Kent the premier cherry-growing county of England, producing some three-quarters of the national crop. The present-day cultural methods in the area are here surveyed by Mr. Kent.

**T**HE cherry is said to have been introduced into Kent by the Romans. Be that as it may, there is little doubt that when, in the middle of the sixteenth century, Richard Harris, fruiterer to Henry VIII, decided to plant a new orchard at Teynham, fruit trees were already well established in the locality. To start his orchard, Harris obtained grafts of pippins from France and of cherries and pears from the Low Countries. The predominance of Kent in cherry growing is due mainly to its enjoying large areas of suitable soils and to a more favourable climate than most other parts of the country. Exploitation of these circumstances was certainly helped by the proximity of the London markets, the situation of the county on the main route from the Continent, and the existence of water transport facilities in the days before roads permitted smooth and easy passage and railways had been built.

The total area of fruit grown in Kent is about a quarter of that of England and Wales, but the cherry acreage accounts for almost three-quarters of the national figure. Sweet cherries comprise by far the greater proportion of trees; acid varieties, such as English and Flemish Reds and Morello, form less than one-tenth of the total.

Of all the hardy fruits in this country, the sweet cherry is the most exacting in its soil requirements. It succeeds only on well-drained soils of sufficient depth. In poorly-drained soils roots are easily killed in a wet winter and, even if the tree survives, shoot growth is checked and fruit size and quality are decreased. Shallow soils dry out too readily in summer and limit growth and fruit size. The extensive areas of brickearth in the Sittingbourne—Faversham area provide the greatest concentration of cherries in England. Elsewhere in Kent, deep, well-drained soils, especially drift soils, offer excellent conditions on the Lower Greensand (ragstone) and Tunbridge Wells Sandstone formations.

A lot of rain in the flowering period of cherries (usually April) is unfavourable to pollination, while rain during the ripening period, especially after a dry spell, causes fruits to crack badly. Thus a low summer rainfall, as in North Kent, is a decided advantage.

**Breeding and Planting** A few years ago cherry varieties were invariably grafted on seedling sweet cherry rootstocks, often dug from woods and known as "Gaskins" or "Mazzards". Now, a very large proportion are grafted or budded on a rootstock selected and tested by East Malling Research Station and known as Malling 12/1. This rootstock is easily raised by layering and, in addition to producing uniform stems for working, it is more resistant to Bacterial Canker than many of the seedling stocks. Trees on Malling 12/1 rootstocks are vigorous and well-anchored. They are worked at the height at which the lowest branches are desired, so that the main trunk of the tree is formed of the comparatively disease-resisting rootstock. Healthy cherry trees grow into large specimens requiring wide spacing, and fruit-picking ladders may have to be up to 40 feet

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long. Growers would therefore welcome a dwarfing rootstock which would restrict tree size without prejudicing cropping, but so far efforts to find one have not succeeded.

Trees with a clear stem of about 6 feet and a head of branches one year old from bud or graft, are most widely used for planting. Since the control of grass by the gang-mower has generally replaced grazing by sheep, there has been a good deal of interest in trees with shorter stems. But as branches of spreading varieties, when not nibbled by sheep, may quickly droop to ground level from stems of over 6 feet, there seems little to be gained from having shorter stems, except to ease the nurseryman's task. Some cherry varieties, however, have very upright branches when young, and shorter stems may be desirable for these to enable more of the crop to be picked from the ground.

Trees are planted either into well-prepared arable land in good heart or into well-managed grassland. They usually grow more slowly in grass, but are thought by some to be rather less susceptible to Bacterial Canker disease than trees making very vigorous growth. After planting, a good mulch is desirable, and indeed essential when planting in grass, so that soil moisture may be conserved. In grassland orchards a circle 6-8 feet in diameter is kept cultivated round each tree for a few years. Arable plantations are sometimes grassed over soon after planting, but more often they are left for five to ten years before being seeded down.

Several years ago plums were often planted between the cherry trees, but this practice is now very much less common. The manurial and spraying requirements of the two trees are very different. Plums, too, are rarely at their best in grass. Bush fruits, such as black currants, are not recommended for interplanting between the young cherries, since the cultivations essential for the bushes are likely to hinder root development of the cherries, and damage may be severe when the currants have to be grubbed. For a similar reason, market-garden crops are not recommended. Strawberries, however, may be grown with little or no detriment to the cherries, to give financial returns in the early years. The four-year span of the strawberry plantation does not prevent grassing down early in the life of the trees.

**Varieties** The Ministry's Bulletin *Plums and Cherries*<sup>†</sup> lists twenty varieties of cherry, ten of which are recommended for general use. In addition, there are six very promising newer ones raised at Merton by Crane. From these varieties a selection for planting may be made to suit any purpose. The so-called "black" varieties have dark skins and coloured juice, while "white" varieties having uncoloured juice and skins of yellow and pink, red or mahogany colour. Some of the "white" varieties, such as Governor Wood, become very soft and bruise easily as the fruits ripen, and the bruises show up prominently on the pale-skin colour. On the whole, black varieties appear at present to be more popular on the market. The large and firm "white" fruits of Napoleon, however, still sell exceptionally well.

The most popular varieties for present-day planting, in picking order, are as follows :

*Early Rivers*\*

Early flowering and ripening. Growth vigorous. Rather less susceptible to adverse soil conditions than other varieties. Fruit of good quality.

<sup>†</sup> Bulletin No. 119. Obtainable from the sale offices of H.M. Stationery Office or through a bookseller, price 2s. 6d. (2s. 8d. by post).

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<i>Frogmore</i>	Rather late flowering, though a second early in ripening. Fruit should be marketed before it is fully ripe. One of the best cropping varieties.
<i>Amber (Kentish Bigarreau)</i>	Latish flowering, ripens midseason. Growth vigorous, at first upright then spreading. Fruit travels well and is useful for processing.
<i>Roundel*</i>	Midseason flowering and ripening. Growth of moderate vigour, upright. Flesh is tender and fruit needs to be picked before fully ripe.
<i>Merton Bigarreau*</i>	Latish midseason in ripening. Growth vigorous, spreading. Commercially, perhaps the best of the Merton varieties.
<i>Napoleon</i>	Growth rather weak and spreading. Very susceptible to adverse soil conditions. Fruit large and firm, very valuable for market.
<i>Noir de Guben*</i>	Early flowering and a good pollinator for <i>Early Rivers</i> . Late ripening. Flesh firm and fruit travels very well.
<i>Gaucher Black*</i>	Late flowering and ripening. Good pollinator for all late-flowering varieties. Fruit large and of good quality. Its value has been more appreciated recently.
<i>Bradbourne Black*</i>	Late flowering and ripening. Fruit less liable to crack than <i>Turkey Heart</i> , but tree is more susceptible to Bacterial Canker than some.
<i>Ohlo Beauty (Ironsides)</i>	Flowers midseason. Fruit is a bright dark mahogany in colour. Latest of widely planted commercial varieties.

\* Indicates a black variety.

The new varieties—Merton Heart, Merton Bounty, Merton Premier, Merton Favourite, and Merton Glory—are of great promise and are being tried by a number of growers. The Flemish and Kentish Red acid varieties are seldom planted today, but the black Morello cherry is grown to some extent. The trees of this kind are best worked on Malling 12/1 rootstocks, but require no greater spacing than 18—20 feet. They should be maintained under arable conditions and need no pollinators.

**Pollination** No variety of *sweet* cherry is able to produce fruits unless its flowers are fertilized by pollen of another variety. In addition, certain varieties are inter-sterile and will not set fruit with each other's pollen. For instance, *Early Rivers* cherry will set no fruit with its own pollen or with that of several other varieties, such as *Roundel* and *Knight's Early Black*. As the result of work at the John Innes Horticultural Institute by Crane, twelve groups of cherry, in which no one variety will pollinate successfully any other variety in the same group, are now distinguishable.

It is of the utmost importance, therefore, to arrange the varieties in a cherry orchard so that suitable cross-pollination is made as easy as possible. A good arrangement is to keep each row to one variety only and to ensure that no inter-sterile varieties are next to each other. One should also try to group the earlier-flowering varieties together, with the later-flowering ones in another group. In most seasons some of the flowers of the latest variety to blossom will open before the late blooms of the earliest variety, but the chances of a good crop are greatest when the bulk of the flowers of adjacent varieties open together. The task of bird-scaring is also made easier when varieties ripening together are in the same part of the orchard.

**Picking and Cultural Treatment** Cherry growers find it advantageous from the point of view of picking labour, and of marketing, to grow a number of varieties ripening successively in early, mid- and late season. This spreads the hectic picking season over the full period

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of about four weeks for any one orchard. When the operation is well in hand, the picking of any one variety may be taken in three stages. First, the earliest fruits to colour well are picked (a practice known as "running"), then the bulk of the crop is collected and, finally, the late-colouring fruits from the insides of the trees are gathered. Each of these stages may extend over about three days for one variety in an orchard. In hot weather, when the fruit ripens quickly, or when picking is behind hand, the whole crop of a tree may be cleared in one stage to make the best use of time. The ripening of varieties overlaps through the season, but this helps in levelling out the quantity of ripening fruit and the flow of supplies to the markets.

Pickers are required in considerable numbers and are mainly women casual workers. They are usually paid by piecework and divided into gangs of eight or ten, each with one man—usually a permanent farmworker—to move the ladders about each individual tree and from tree to tree. Ladders with wide bases and tapering to a narrow top, which combine lightness with strength, are made especially for the purpose, but it still requires a great deal of skill and not a little strength to carry a 40-foot ladder in a vertical position and place it suitably in position without damage to the tree. The ladder-mover's work is made easier when all the trees of a row are of the same variety and when the rows of trees ripen their fruit successively. It is desirable to have a few extra ladders so that as soon as a picker descends a ladder another, already in position in a tree, is ready for ascent. Three-legged stools are useful when the trees are young and the branches will not support ladders.

If the varieties ripen successively over the full season, a gang of eight women is sufficient to deal with about 4 acres of mature trees. Picking is done into handled wicker baskets, which are strapped to the waist to leave both hands free. Each basket holds 14 lb. of fruit.

Permanent trees in an orchard should be about 40–48 feet apart, giving 18–27 trees per acre. To give better returns until the permanent trees need all the space, the original plantings could be between 28 and 34 feet apart (37–55 per acre). Alternate diagonal rows should be removed when the trees become crowded.

In pruning newly-planted trees, the shoots of the one-year head should be cut back by approximately half to a bud pointing outwards. The next winter they should be treated in a similar fashion. Subsequently, leader tipping is usually stopped, later pruning being almost entirely confined to the removal of dead and broken branches. This is best done immediately after fruit picking, before the ladders are moved from the orchard. There has been an increasing tendency in recent years to dehorn or cut back tall branches to a lateral branch to prevent the tree reaching a height where it would need a ladder of more than medium length. This is best done before the branches get too thick, and is carried out in June, or as soon as picking is over.

**Management and Manuring of Orchards** While arable conditions are maintained, shallow cultivations, especially near the tree stems, are advisable. After five years or so, a suitable grass mixture should be sown on well-levelled soil. For a long time a perennial ryegrass—wild white clover mixture was usually chosen, but nowadays more interest is being shown in a seeds mixture of 10 lb. S.50 timothy and 2 lb. Kentish wild white clover per acre. The traditional grazing by sheep has been very largely replaced by gang-mowing. The grass should be kept short, especially in April, May and June, and so many sheep are necessary

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to achieve this that they are liable to become an embarrassment later in the year when grass is scarce.

The cherry tree appears to have a low requirement of phosphates and of potash, but nitrogen is needed each year. Fertilizers such as hoof-and-horn and meat-and-bone are used extensively. Up to 1 ton per acre of the latter has been used but 5-10 cwt. is normal. There is no proof that these expensive organic sources of nitrogen are essential, and some growers prefer to use "Nitro-Chalk" at the rate of 4 cwt. per acre in January, perhaps repeating the treatment in April on the poorer soils.

Deficiencies of iron and manganese often occur. The latter is remedied by a spray containing 3 lb. manganese sulphate to 100 gallons of water applied just after blossoming. Iron deficiency is more difficult to correct, and the only beneficial results so far have come from injections of tablets of iron sulphate into the tree stems.

The most important disease of cherries is Bacterial Canker, which may kill shoot, branch or the whole tree, the latter by attacking the main stem, usually before the tree has reached the age of eight years. The same disease produces spots on the leaves, from which the dead portions drop out to leave a shot-hole effect. Preventive treatment by applying a Bordeaux mixture spray just before the blossoms open and at leaf-fall in October is best. Nowadays DDT is usually added to the pre-blossom spray to control caterpillars. Powerful machines are necessary to spray the large trees of a mature cherry orchard, and for the tallest trees a special nozzle may have to be used.

## FARRIERY YESTERDAY AND TODAY

DAVID GUNSTON

The village blacksmith is no longer the prominent and romantic figure he was in Longfellow's day. Where he continues to ply his trade, his time is taken up more and more with mechanical repairs. But there is a vital need for recruits to this ancient and still valuable craft if it is not to die.

THE farrier was for so long a central figure of village life, as familiar and as important as the squire, the parson and the innkeeper, that he became an accepted part of the rural scene. To this day a village without a blacksmith (and there are many) seems incomplete, a community not properly rounded off in the traditional fashion by a gloomy, fascinating shop, the fly of sparks and the clatter of iron. To lament the loss in many an area, where horses may be something of a rarity, is both futile and absurd; but such is the appeal of the farrier that nostalgia and sentimentality cling easier to him than perhaps to any other rural craftsman. Even where there is a modern mechanized smithy, one may often find an old farrier playing new trades with tractor, binder and even car, lamenting the while that horses no longer queue up for his attention, as they once did.

Nevertheless, the shoeing smith is by no means an outdated relic over the country as a whole. Naturally, his prosperity varies considerably from area to area, and racing and riding horses provide him with more work than horses used solely for agricultural purposes. But even today, when the national population of horses of all types is slowly but steadily falling,

## FARRIERY YESTERDAY AND TODAY

reflecting the increase in mechanized farming, there still exist smiths who fit between 60 and 100 shoes in a working week. Admittedly, these are usually for hunters, for the farrier is a recognized adjunct to any hunt, however small, and for horses used for racing, riding or light work with traps, etc. In the middle of the hunting season a good man situated in hunt country may be called upon to fit twenty shoes a day. One Norfolk smith reckons his weekly average of agricultural shoes, however, to be as high as sixty. This is, of course, as unusual as it is praiseworthy; generally speaking, a smith in a purely agricultural district will be called upon to fit far fewer shoes in a week—sometimes not one!

The farrier cannot go out in search of work; it must come to him. It says much for the continuing value of the craft and its decline in many rural areas that owners of horses of all kinds must take them very long distances to the nearest smithy, not uncommonly by road, sometimes even by rail. The good smith is invaluable, and will be so as long as horses' hoofs ring on British lanes. His scarcity, itself an all too clear symbol of the changing pattern of farming and country life, must not be deplored. What must be done is to ensure that the high skill of the farrier, gathered and shaped through centuries of indispensable practice, is never lost, and that not only all those who seek to achieve a smith's skill are fully trained to the craft but others, suitably endowed with strength of body and purpose, must be enabled to carry on in the honoured tradition.

**An Ancient Craft** The first farrier was probably some early man who realized the wastefulness of setting free tamed horses that had fallen lame after rough working behind a primitive plough or cart. He must have decided to experiment by fixing a narrow strip of iron to the lower part of the "box" of the horse's hoofs. The idea was good and remains to this day, but these first horseshoes had all their nail-holes in the centre of the iron, which often caused further laming of the horse by driving the nails or iron pegs into the sensitive "quick". Indeed, it was some time before the modern practice of arranging all the nail-holes as close to the outer edge of the hoof as possible became general.

The history of farriery is almost the history of Britain. Before the Romans came, the Celts, who were skilled in ironwork, took great care of their horses, and probably used some form of metal protection for the hoofs. The Romans knew all about proper iron shoes, but then they were road-makers. The very word "farrier" is Norman-French in origin, meaning one who works in iron, and in those times ironwork and shoeing were almost synonymous. The modern dictionary gives, as a second meaning of the word "farrier", a horse doctor. This is a reminder that early shoeing smiths were invariably men with an unsurpassed knowledge of equine anatomy and of all the ills that might beset a horse. As Markham wrote in 1622, "An excellent Smith or Farryer, who shall ever be furnished with Horseshoes, nayles, and drugges, both for inward and outward applycations". In those days the smith was expected to be able to diagnose any complaint and to supply medicaments for its cure. Strangely enough, although weird quack remedies were not unknown among medieval farriers, their knowledge was mostly sound, and their remedies were often more effective than those prescribed by physicians administering to human beings. It is interesting to note, too, that the still very thriving Farriers' Company, one of the ancient Livery Companies of the City of London, was founded as early as 1356, in the reign of Edward III, and the year of the Battle of Poitiers. Its Royal Charter dates from 1674.

Like most crafts of some complexity, farriery developed slowly, and often painfully for the horse. After the correct positioning of the nails, which until quite recent times were always made by the smith himself (not, as now, a standardized product), the next important advantage was the clinching, now second nature to any smith. Then came the idea of the toe-clip, which gave a much better fit to the shoe than hitherto, as well as all-important rigidity in use. With the growth of surfaced roads and stone-paved trackways, came the need for a sturdier type of shoe that would wear longer on these hard surfaces. Thus were developed the calkin and the wedge shoe with their extra thick heel. A development arising from these new kinds of shoe was the making of the shoe thickest where the friction on the road was greatest.

Progress did not end with the heavy, scientifically reinforced design of shoe. Many horses found it too heavy for comfort, and so some experimenting smith evolved the "fullered" shoe. This had a regular groove right round the nail line, reducing the weight and enabling the nails to be embedded deeply within the shoe itself and clear of all contact with the ground. Such shoes rarely work loose, but they take two men to make—one to hold the fuller in just the right position with his tongs, while the other swings the massive sledge-hammer.

**Fitting the Shoe** Most smiths still forge their own shoes, piercing the seven or eight nail-holes with a heavy hammer-shaped "pritchell" while the metal is red hot. All the usual designs of shoe come easily to trained hands, and occasionally there is a call for a less common type, a G-shoe for an animal with a "bad" or soft diseased portion to its hoof maybe, or something alleged to prevent slipping on frosty roads—a popular sideline for the inventive craftsman.

Individual techniques, both of shoe manufacture and of fitting, vary from place to place, but the basic idea is the same. The shoe must be fitted tightly under the foot on the outside of the hoof, with the clip drawn neatly up from the outer edge of the shoe and grasping the lower wall of the foot. The nails must be hammered in outwards through the hoof to prevent damage to the sensitive growing horn. As a rule, the smith takes the horse's fetlock between his knees and cuts away the old clinched nails with his stout "buffer". The old shoe is then pulled off with pincers, the hoof is carefully examined and pared with a rasp if necessary. A shoe is then chosen, tried for shape, and made red hot. It is then taken to the anvil, the clip deftly drawn, sharp edges or burrs filed away, the holes pierced and the still hot shoe placed on the hoof, burning the horn as it is applied. Few good farriers will fit a shoe cold. Several re-heatings and hammered adjustments are usually necessary before the farrier is satisfied and the nails are driven home. Finally, the shoe is clinched to lie flat on the outside of the hoof.

Not only must a farrier have an expert knowledge of ironwork, including forging and drawing, but he must love and understand horses, often better than their owners. And although the veterinary surgeon may have replaced him as a horse doctor, a deep knowledge of the horse's anatomy is still essential. A false or ill-judged blow with a hammer might have disastrous results for the horse, and lead to an unpleasant accident for the smith. In addition, he must have an intimate knowledge of the different types of horse's feet, and of the temperaments of their owners, since all the smithy skill in the world would be useless to a man afraid of a nervous horse, or unable to control an impatient one.



Photo : Mustogra

*Village Blacksmith*

## THE ENGLEFIELD



*Top : Compact grouping of farm buildings at Mayridge Farm.  
Centre : Modern cottages in Englefield Village.  
Bottom : A soundly constructed cattle crush made from estate timber.*



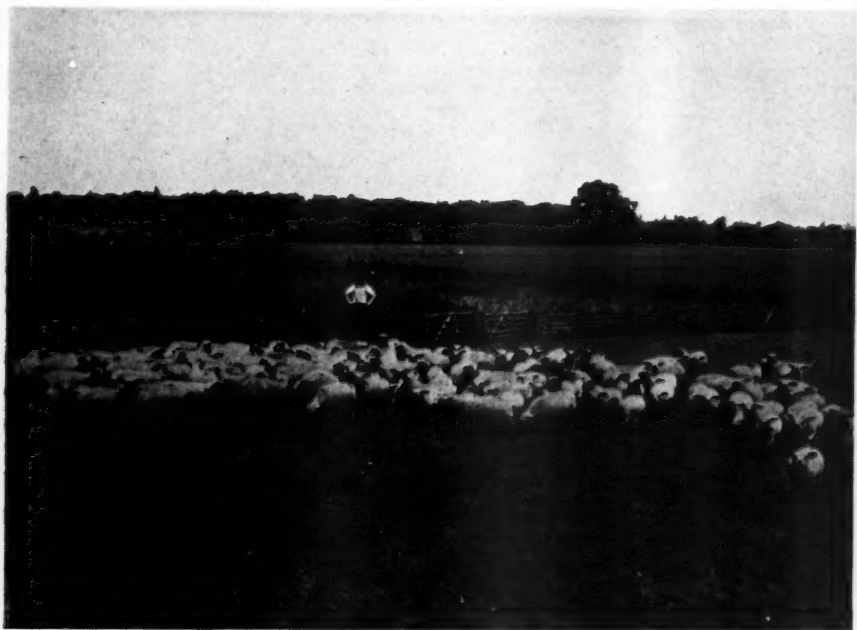
Scots pine is spreading rapidly by natural regeneration.



Japanese larch planted in 1941.



Aberdeen-Angus cross-breds are a feature of Chalkpit Farm.



Pedigree Hampshire Downs are kept at Mile House, Mayridge and Lambdens Farms.



*Left: Noir  
de Schmidt*



*Right:  
Bigarreau  
Napoleon*

*An article on  
cherry growing  
appears on  
pp. 168-72.*

*Photographs  
by R. A. Malby*



Photos : Eric Guy

## SOME ASPECTS OF

Hampshire Downs folded on arable land at West Ilsley.

Combining on the Lockinge Estate, near Wantage.



Photos : Eric G

## **BERKSHIRE FARMING**

Arable farming in the Lambourn Valley.

Downland grazing near Aldworth



## FARRIERY YESTERDAY AND TODAY

**The Overworked Smith** In some areas today it is said that the shoeing smith, like the thatcher, is so far from being a remnant of a dying craft as to be more in demand than ever. If this is true, it is because of the widespread shortage of his kind, which brings horse owners long distances to find him. At the same time, it often gives him more work of an unnecessary kind, for the absence of a smith in a village may encourage some horse owners to neglect their animals' hoofs, with the result that the smith has to deal with diseased, overgrown or malformed hoofs before he can fit his iron. To the farming community as a whole, the smith is still indispensable, and if he obtains his livelihood from livery stables or a hunt, it is the farmer who gives him his most important work.

What of the future of farriery? What are the prospects of keeping it healthy and alive? Not unnaturally, many lads see little future in it, believing that horses will soon become virtually extinct in many districts. To add to the difficulties of the problem, there are now some areas with an ordinary general smith, concentrating mainly on machinery repair work, where the number of horses used for hunting and riding has increased since the war. This means that more skill is needed in the existing shop, and adult training is indicated.

The letters R.S.S. proudly nailed in iron above many a blacksmith's shop show that he is a Registered Shoeing Smith who has passed the strict examination of the Worshipful Company of Farriers. This examination demands and, indeed, present-day training is designed to give, a sound knowledge of equine anatomy and the scientific principles underlying the whole art. There are also other, and more advanced, qualifications which a man may attain—for example, an Associateship of the Farriers' Company of London (A.F.C.L.), or the much-coveted Fellowship of the Worshipful Company of Farriers (F.W.C.F.), although the latter is seldom reached by the practical man in the village smithy. There is perhaps a tendency among the mechanical smiths of today to despise farriery as an archaic and unnecessarily dangerous and unpleasant occupation. It is a tendency which all who care for the craft's future will deplore.

**Opportunities for Training** As might be expected, the Rural Industries' Bureau has done sterling work in furthering the craft and training new recruits. In 1946 the Bureau, acting as agent for the Ministry of Labour and National Service, undertook the organization of training ex-service men in blacksmithing and farriery, and over 130 men completed their training. Courses in farriery continue at the Bureau's Training Centre at Wimbledon and, in conjunction with, but complementary to, the normal instructional and advisory visits of the Bureau's Farriery Officer, some local authorities have appointed instructors to hold training classes in certain counties, thus enabling the possibly isolated rural smith to take the examinations of the Worshipful Company of Farriers. The continuing practice of holding farriery competitions at shows is a useful extension of this training encouragement: a number of apprentices who have successfully entered these contests have since qualified as registered shoeing smiths. In addition to the regular courses of training at Wimbledon and the classes held up and down the country, individual tuition has also been given by the R.I.B. to men in their own shops, and the standard required and maintained throughout is high. All this work is invaluable, and no one seriously interested in a vital and immensely satisfying craft approaches the Bureau in vain. But the future of farriery ultimately depends not on the continuation of ancient skill alone, but on two inescapable interests—in horses, and in hard work.

## FAIRS, MARKETS AND SHOWS

### THEIR ORIGINS AND HISTORY

J. T. MARSHALL, M.A. (Agric.) Cantab.

*National Agricultural Advisory Service, Eastern Province*

It is a far cry from the market and fair of the past to such a specialist show as "The Royal" at Windsor. Yet it serves the same end—a venue for farmer and merchant, a common ground for town and country.

**I**N setting out to retrace old paths by which one might hope to come at a clear and chronological sequence of causes and effects to constitute the history of fairs, markets and shows, one appears at first to be faced with a tantalizing lack of evidence which, however, serves better to whet one's curiosity. But this is more apparent than real, for having succeeded in opening the first doors, many avenues of research and much information are exposed, and the difficulty becomes one of selection, particularly when trying to reduce the materials to an outline compressible within a relatively short article.

It has been suggested, probably with much truth, that the history of a nation would be more accurately and truthfully portrayed if written around the development of its trade and commerce, with the long pageant of Kings, Governors, Princes, and "battles long ago" as merely incidental, and what might be termed ancillary, events. Certainly trade, national and international, or the lack of it, has fashioned men's lives, and within this trade the fairs and markets of the country, with their early religious-pastoral-agricultural background, have played a major part, as indeed some of the great trade fairs still do.

Definition as between "fair" and "market" does not appear clear-cut, the terms having to a large extent become synonymous. Originally, there may have been some legal or "charter" distinctions, but certainly in more recent times "All markets, fairs, and marts, and all courts incident or belonging thereto" were listed together, as in an Act of George II. This Act referred to the change-over from the Julian to the Gregorian calendar and stipulated that the dates on which such fairs etc. were to be held should conform to this "said new supputation of time"—that is, anticipated or brought forward by the space of twelve days. The implications of this are interesting as showing the influence of the Church in ensuring that fairs continued to be held on those saints' days and religious feasts to which they so often owed their origins.

**Close Association with the Church** The first impulses providing the urge to travel and for men to gather in vast concourses are said to have been religious rather than commercial, and the pilgrimages between the seventh and eleventh centuries no doubt created a need, anyway, of food and bare essentials, beyond the capacity of any purely local supply. For such occasions, it is also reasonable to presume safe conduct and suspension of local hostilities; an atmosphere, in fact, safer for the transport of goods and merchandise. It is unlikely that essential trade would have been regarded as profanation of religious ceremony; advantage might well be taken of it for religious orders to press the sale of indulgences. In earlier times, it would appear that there was considerable trade at the Greek games of Olympia, and also fairs at the political assemblies of Thermopylae.

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Fairs were often held for specific purposes, such as the buying and selling of cloth, cheese, pewter, etc., and were sited on land outside the mark, manor or parish. They were supposedly subject to a special grant from the Crown and mostly formed part of the franchise of some great monastery or religious house. Thus they were an important item in the economy of medieval society.

At one time fairs were even held in churchyards, until the practice became regarded as an abuse and was finally prohibited by a statute of Edward I. This original close association of the fair with the church doubtless accounts for their taking place on certain saints' days, for example, St. Giles, St. Bartholomew, St. Frideswide, according to the particular saint to which the church or religious house was dedicated. Fairs were also held on other religious feasts and occasions. No doubt due largely to a condition of the Royal grant pertaining to fairs, quite stringent measures were taken to maintain the quality of goods for sale, and also to keep law and order, even to the extent of having special courts sitting at fairs to convict and punish wrong-doers.

**Trade and Amusement** In their wider national, and even international, character, and also possibly in certain legal and charter rights and privileges, the great fairs differed from the more frequent and localized town markets. They also had certain features of amusement, such as theatres and side-shows, and probably a "show" element, as with the horse fairs, not usually present at local markets.

Fairs would supply the goods not generally to be found in the ordinary town markets, and to the great ones came much foreign produce. Tolls from town markets were a useful addition to municipal income, and therefore a much sought after privilege. It is reputed that the city of Norwich received a charter from Stephen as early as 1147 granting this valued right to the collection of market tolls.

One would imagine that to complete the story of the great fairs there would have appeared some natural and gradual transition through the early fairs and markets, leading by the annual sheep shearings to the large agricultural show as we know it today. This is not so, however, for the great fairs apparently just came to an end, as was doubtless inevitable with the coming of much improved and daily communications between rapidly expanding industrial centres. What has happened is that certain rather distinct and complementary features of the great fairs have split off and perfected themselves as separate entities. One—the purely show element—has reached its peak in the annual show of the R.A.S.E.; a second—the element of pure amusement—is now provided by the itinerant funfair, with all its numerous side-shows and major attractions for pleasure only. The large, modern agricultural show is, of course, financially backed largely by commercial organizations, but there is virtually no exchange of goods on the spot, the various stands being purely for display, show or educational purposes.

It is held by some authorities that fairs were first introduced into England by the Romans, it having been a custom of the Roman Emperors to institute fairs at which the laws were proclaimed, the fair attracting many who otherwise would not be present. Under the Normans, and with Papal influence, the right of holding fairs was granted to the Church, but due possibly to riots and disturbances at what were also religious functions, they came to be granted only by charter and mainly to those towns and places where magistrates and the "arm of the law" could maintain order. Exceptionally, however, the right was also granted to lords of the manor and even to

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individuals. In the ninth century, Alfred the Great enacted that foreign merchants might in England attend only the "four fairs" and remain for no longer than forty days: seemingly this was an early attempt at some form of trade restriction and control. Throughout our history there runs this preoccupation with trade and commerce. The Magna Carta in 1215 specified that there shall be freedom of journeying and trade secured to foreign merchants, and also uniformity of weight and measure throughout the realm.

Early agricultural writers were well aware of the importance of the fairs in the management and economy of the farm or estate, as instanced by their references to them. Thus St. Robert Grosseteste, Bishop of Lincoln 1240-41, in the twenty-eighth and last of his "Rules", as written for the Countess of Lincoln, advised "that at two seasons of the year you make your principal purchases at the fair of St. Botolph . . .". And Thomas Tusser (c.1515-80), in his *Five Hundreth Pointes of Good Husbandry* wrote :

*At Bartlemew Tide, or at Sturbridge Fair,  
Buy that as is needful, thy house to repair.  
Then sell to thy profit, both butter and cheese,  
Who buyeth it sooner, the more he shall leese.\**

Amongst the famous and the infamous fairs within the realm, that of Stourbridge, near Cambridge, with its European reputation, has perhaps been best remembered and recorded. There were others of great importance, such as Bartholomew Fair, which was held within the walls of the City of London. A charter for a "King's Market" was given in 1102 to one Rahere—a "pleasant witted gentleman" we are informed. Henry I granted his "firm peace" to all who should travel to or from this fair. Certainly for 700 years it was held at the Feast of Bartholomew, let us hope in a lasting atmosphere of "firm peace." Infamous rather than peaceful was the Horn Fair, held at the village of Charleton, Kent, and referred to by Daniel Defoe in his *Tour through the Whole Island of Great Britain* (c.1723). He states there was "yearly collected a rabble of mad people at Horn Fair; the rudeness of which I cannot but think is such as ought to be suppressed". Incidentally, it is to Defoe that we owe one of the best contemporary accounts of Stourbridge Fair.

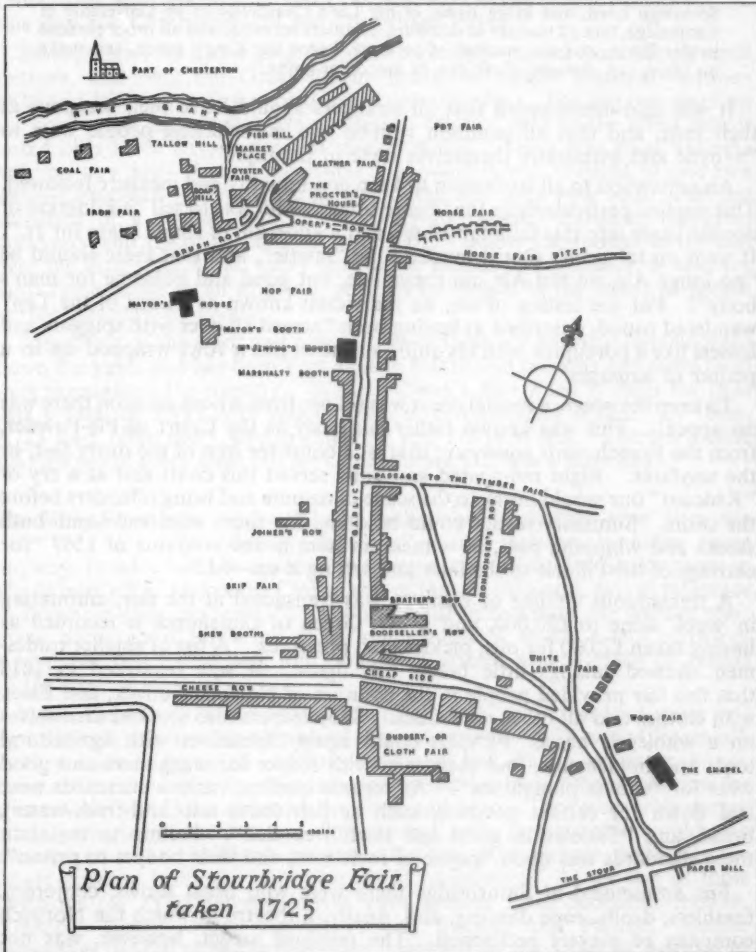
Other large fairs were held at Boston, Cambridge (Midsummer Fair), and Reach, while in Europe many international trading fairs were established, notably at Champagne and Brie in France, and at Nijni Novgorod in Russia.

**The Famous Stourbridge Fair** If one could have joined the hurrying, jostling crowds on the dusty roads leading to Cambridge and to Stourbridge Fair in its heyday, one would have been in very mixed company, for as well as those having legitimate trading business there—the merchants, drovers, fishermen, etc.—one might have rubbed shoulders with serf, monk and peasant or even noble, and, of course, with vagabonds and beggars by the score. One writer has described how the "clamour of trumpets, deep-sounding drums, din of a thousand discordant voices" could be heard long before reaching the fair. It is not difficult to imagine the atmosphere of excitement in such an assembly, or the variety of motives which had brought it together, mainly for business doubtless, but also for pleasure, gossip, love, heresy, or even treason. On arrival at the fields of Stourbridge, so called because of a rivulet—the Stour—which flowed to

\* lose.

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the east of them, one would have found rows of booths laid out in orderly streets or "Rows", generally named after the goods sold there, such as Ironmongers' Row, Hatters' Row, Garlick Row, Booksellers' Row, etc. There were also the Duddery for the sale of woollen goods, clothes, etc., and the taverns, coffee houses and eating houses. A circuit of these booths would have taken one "full three miles", and the whole covered an area of half a square mile. Goods of incredible variety were offered for sale, including silks, velvet, glass, jewellery, furs, tar, pitch, buckram, fustian, woolpacks, produce of the Cornish tin mines, and many manufactured goods.



The greater part of this merchandise would have come by river through the medieval ports of Blakeney and Lynn, and the Act of 1649 for the drainage of the Great Level of the Fens, which virtually put a stop to this river traffic, must seriously have affected the transport of goods to Stourbridge Fair.

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**Peace and Fair Measure** Venetian, Genoese, Flemish and Spanish merchants, even those from Greece and Crete, could have been found at Stourbridge Fair. The first known charter for it was granted by King John about 1211 to the Lepers of the Hospital of St. Mary Magdalen. The University was, however, responsible for seeing that correct weights and measures were kept, and also had the custody of Assize and assay of bread, wine and beer. About 1548 the custom of "Crying the Fair" started. The proclamation read:

"Wee charge and straightlie command in ye name of ye King of England our Sovereign Lord, and in ye name of my Lord Chancellor of ye Universitie of Cambridge, that all manner of schollers, schollers servants, and all other persons in this Fayre, and the precinct of ye same, keepe the King's peace, and make no fraye, cry, owtasse, shrekinge, or any other noyse."

It was also commanded that all strangers should leave their weapons at their inns, and that all common women and misbehaving people were to "avoyde and withdrawe themselves owte of the fayre".

An adjuration to all tradesmen to keep good quality and measure followed. This applied particularly to the "beare bruer", who was to sell "a kilderkin of double beare into this faire for 2s. 6d. and a kilderkin of single beare for 1s.". It went on to specify that it must not be "fawtie", and that there should be "no longe Ale, no red Ale, no ropye Ale, but good and holsome for man's body". For the testing of ale, an individual known as "Lord of the Tap" wandered round, described as having been "armed all over with spiggots and fossets like a porcupine with his quills, or rather like a fowl wrapped up in a pound of sausages".

To keep the peace, a special court was set up, from whose decision there was no appeal. This was known rather curiously as the Court of Pie-Powder, from the French *pieds poudreux*; that is, a court for him of the dusty feet, or the wayfarer. Eight red-coated assistants served this court and at a cry of "Redcoat" one would hurry to the scene of dispute and bring offenders before the court. Summary justice could be done, for there were on hand both stocks and whipping post, as witness an item in the accounts of 1567 "for carriage of the Pillorie to the fairer and setting it up—6d."

A tremendous volume of business was transacted at the fair, amounting in wool alone to £60,000, and a Mr. Green of Limehouse is recorded as having taken £2,000 for oils, pickles, and preserves. A list of smaller tradesmen showed takings little below this figure. It was remarked in 1613 that this fair provided people in the counties of Norfolk, Suffolk, and Essex with clothes and all other necessities. Shopkeepers also stocked themselves on a wholesale basis. Farmers could equip themselves with agricultural tools and implements, and their men with frocks for waggoners and good wear for "robust ploughmen". As regards quality, various standards were laid down for certain produce, such as fish (both salt and fresh-water), bread, and "Tallowe in good and lawfull candell". Failure to maintain these standards was upon "payne of forfeiture, and their bodies to prison".

For amusement at Stourbridge there were wild beast shows, conjurors, tumblers, drolls, rope dancing, and, finally, a theatre at which the Norwich company of players performed. The religious aspect, however, was not overlooked, there being an open-air pulpit, generally situated in the Cloth Market or Duddery, from which sermons were preached "for the edification of the strolling sinners". There was the Horse Fair Day (September 14), when there was a show of beautiful animals, hunters from Yorkshire, and draught horses from Suffolk, etc. This apparently was the day of greatest

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hurry, when the number of people and the quantity of victuals they consumed was "incredible to conceive".

Stourbridge also became famed for costly works of embroidery "wrought as well upon Velowet, and Cloth of Gold—or Silver of Cipse—or Spaynyssh laton togedre".

Some great names are connected with Stourbridge Fair. It is thought that Bunyan visited it as a lad and later recalled it as Vanity Fair in his *Pilgrim's Progress*. Sir Isaac Newton is reputed to have bought his famous prism there, and certainly the diarist Pepys knew it, for he records in 1668 "Up by times, took wife and Mercer and Deb, and W. Horner who are all to set out this day for Cambridge—to see Sturbridge Fayre".

Stourbridge Fair had a long day, for it certainly existed from the eleventh century, and only the Great Plague broke its annual sequence between 1625 and 1666, when it was held only intermittently. The last comment on the fair, some time in the late nineteenth century, was to the effect that it lasted only three days instead of several weeks. There was good business only on one day—that of the Horse Fair—and it was reduced to one row only—Cheapside—where some confectionery and toys were sold. The rest consisted of a funfair with steam merry-go-rounds. Camden, the great antiquary and historian, said of it in 1607: "Below Cambridge to the east near the little river Sture, every year in the month of September, is held the most famous fair in all England, whether in respect to the resort of people or the quantity of goods".

Something of the spirit and atmosphere of these old national fairs lingered down the years and has been kept alive in traditional markets and more local fairs throughout the country. William Owen's *New Book of Fairs* for 1834 lists a total of 1,893 fairs and markets in England and Wales. Of these, 1,721 took place every year in England, and 172 in Wales. There is a note that the eve of every great fair for cattle, horses, etc. was a show day.

**The Sheep Shearings** Annual local gatherings of another type were the "sheep shearings", which appear, in olden times anyway, to have been occasions for feasting and jollity, for Shakespeare in *The Winter's Tale* makes the Clown, son of the old shepherd, say, in reference to the sheep-shearing feast, "I must have saffron to colour the warden pies; mace, dates, none, that's out of my note; nutmegs, seven; a race or two of ginger, but that I may beg; four pounds of prunes, and as many of raisins o' the sun".

Later, between 1778 and 1821, Coke of Norfolk, that great landowner and agriculturist, was to make his annual sheep shearings—or "Coke's Clippings", as they came to be called—affairs of national and, finally, of international, fame. To them came the scientists and celebrities from other countries, for whom Coke would act as leader, lecturer, and host. They were truly democratic gatherings, where crowned heads and petty farmers alike could give their views on agricultural matters. Politics were strictly excluded, the whole purpose being the improvement of husbandry. At the last of these functions (in 1821) representatives were present from Scotland, Ireland, America, Russia, Nova Scotia, France, Sweden and Poland. Similar assemblies for the same purpose were convened by the Duke of Bedford at Woburn.

No doubt it was the obvious need for a continuation of such annual meetings where agriculturists from all parts of the country could get together in a constructive spirit of competition and criticism which prompted the then

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Board of Agriculture to hold the first National Agricultural Show in 1821. This took place at Aldridge's Repository in London and was, by modern standards, a very modest affair. There was a total of £685 in prizes, and cattle shown were mostly Shorthorns, but also present were Herefords, Devons, Longhorns, and Alderneys.

**The Agricultural Show** The honour of holding the first purely local agricultural show in 1777 is claimed by the Bath and West and Southern Counties Society, but certainly by the end of the century there were many local farmers' clubs holding their own cattle shows, ploughing matches, etc. Smithfield Cattle Club was founded in 1798 and held its first show in 1799. In Scotland, the Highland Society had been known since 1784.

On May 12, 1838, there met the provisional committee of The English Agricultural Society, which in 1840 became The Royal Agricultural Society of England, now known throughout the world as the body which every year provides the magnificent spectacle of the Royal Show, affectionately abbreviated by the rural community to the "Royal". The Society's first show was held at Oxford in 1839 on Mr. Pinfold's pasture ground, an area of some 7 acres or so, and it is indicative of the show's continued expansion that, by 1878, 70 acres were necessary, while at the Warwick meeting of 1892, 90 acres were covered by cattle pens, stalls and booths. At the Centenary Show in 1939, which was held in Windsor Great Park, the showground area was 126 acres and there was an attendance of 118,036 people, as compared with the 20,000 who visited the first show at Oxford. The jumping competitions, which were introduced into the Royal at Manchester in 1869, met with criticism from some quarters that they made it more of a circus than a show. However, they have remained and become a very popular feature.

With the exception of the period from 1903 to 1905, the Royal has been held at a different venue each year. For the three years mentioned the unfortunate experiment of holding it on a permanent site was tried, resulting in a loss of £23,879. The site selected (and bought) was 102 acres at Twyford Abbey in the London area.

What an amazing revolution has occurred since the Society first offered its gold medal for an agricultural motor in 1909! One indeed becomes "dusty footed" and weary if all the long avenues of tractors and mechanical implements are explored at the modern show. An analysis of cattle and other stock exhibits over the years would be interesting, and in some cases, as for instance in sheep and horses, rather sad reading. At the Windsor Show of 1889 there was a total of 1,069 entries for sheep; by 1939, these were already down to 728, whilst the virtual extinction of the farm horse appears almost inevitable. There are many facets to the Royal today—forestry exhibits and woodland competitions, local crafts, fruit and, of course, the gorgeous spectacle of the Flower Show.

We can see today the unquestionable evidence of the value of these shows to the whole of the agricultural industry, and the wider national purpose in forging a sympathetic link between the predominately urban population and the rural community. They are a heritage cherished equally by both sections, as being part of the pageant of Britain's history and of the life of its countryside.

## FIRST DAY AT THE ROYAL

GODFREY BASELEY

*British Broadcasting Corporation*

Mr. Godfrey Baseley will be well known to readers as the producer of *The Archers* programme on radio, and the organizer of agricultural and rural programmes on television. Living for a time on the Royal showground last year, he is able to give an authentic account of the first stirrings when, after more than a year's preparation, another Royal is born.

**T**HERE must be a story about the Royal on every day of the year—from the time the site is chosen until the last visitor leaves at the end of the last day. To most people the Royal Show is a great agricultural occasion, and for four days it is a scene of hustle, bustle and pageantry and, for some, unremitting hard work. Every stand, every exhibit and every livestock entry has its own particular part to play in the overall pattern of the Royal.

With the first grey streaks of morning, activity springs from every part of the ground. There is a general awakening among the horses. Men from Scotland are taking out their Clydesdales for morning exercise. Sleepy-eyed grooms come out of the gloom of empty horse-boxes to swill their faces in a bucket of cold water and then, jackets off and sleeves rolled up, set to work on an hour's grooming and polishing. Every hair of the Shires is feather combed and brushed till it shines like silk. A whinneying here and there heralds the "bait" that is on its way; a bait that has been carefully mixed and blended at home and carted miles to keep the horses' appetites just right. They must be at their pristine best today.

In the cattle lines the scene is much the same, except that here representatives of all kinds of breeds are being led out for exercise in the judging rings or tied to the railings while they are washed down and scrubbed with water.

In the sheep pens, shepherds are trying to improve upon perfection—hand-trimming infinitesimal pieces of wool. Among the pigs, men are whitening the Whites with sawdust and oiling the Blacks to make them look blacker still.

Many of the stockmen have been here on the showground for the past two days. They are old hands; all these preparations have been made before. Nevertheless there is a tension about their work this morning, and many an appraising glance is cast at a competitor's charge to see if, by some magic, transformation has taken place during the night that may alter the imagined final placing.

I leave the livestock and walk over through the long lines of machinery, so soon to be set in motion with a cacophony of sound and kaleidoscope of colour. At the moment they stand silent and looking almost self-consciously a little out of place in the close-cropped lawns of the enclosures.

Around the perimeter of the ground are the exhibitors who sell cattle foods and seeds and all the ancillaries that are the bread and butter of farming. It is here that their customers will come to refresh themselves with tea or coffee—or maybe something stronger—while they chat over all they have seen and all they hoped to see, and recall the glory of other Royals that have been held in other parts of the country.

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I smell breakfast cooking—that delicious, seductive aroma that comes from bacon fried in the open air—for inside all these stands night watchmen have kept their vigil over the many valuables so soon to be displayed.

Slowly the showground begins to come alive. Paper-pickers, manure carts, paper boys, officials and judges multiply and hurry about their appointed tasks. At the entrances the click-click of the turnstiles quickens as the first enthusiasts arrive well in time to watch their favourite breeds of livestock being judged.

It is now that we see the animals at their best. Led out by their attendants immaculate in white coats, each animal is paraded in turn before the keen eye of the judges. Class after class walk solemnly around the ring, still watched by the enthusiasts with growing excitement, until the final award of the championships, the prize coveted above all others—"Supreme Champion at the Royal". For some, this nerve-racking test of endurance will go on well through the day, and those in charge have no time to think of the Guardsmen in their scarlet uniforms playing in the bandstand or of the gay, ever-changing pattern of the well-dressed crowd thronging the avenues and aisles.

Now in all the shedding and on all the pens the prize cards have gone up. It is a proud moment for those attendants who can boast a First or a Championship when the crowds press in to see their animals and their friends come in to congratulate them. For the rest, they relax on the plentiful straw and make their own, unofficial judgments. The animals, too, are lying down; they sleep or just wait patiently for whatever next may be required of them.

And so the day wears on. As the events in the main arena come to an end, the vast crowds move through the turnstiles to their cars or the waiting buses. The machinery is stopping, and gradually an almost awe-inspiring silence, matching the declining daylight, spreads over the showground. The scene reverts to much like that of the early morning, with the attendants making their charges comfortable for the night and the caretakers in the stands getting all ready for a renewed start tomorrow.

But here and there, little groups of people who meet each other once a year at this show are still telling tales and exchanging experiences. They are reluctant to go. They laugh at a joke and call their "Goodnights" as they separate.

A stillness settles on the ground, there is a smell of bruised grass trodden by thousands of feet; and so, as Wordsworth might equally have said of this—"All that mighty heart is lying still".

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## AGRICULTURAL EDUCATION

A 16-page booklet recently published by the National Agricultural and Dairy Examination Boards presents a survey of the education and training opportunities for an agricultural career and gives information that should be of great value to prospective recruits to the industry and to those who have the responsibility of advising them. The booklet is entitled *AGRICULTURAL EDUCATION* and single copies will be sent free of charge on application to the Secretary of the Board at 16 Bedford Square, London, W.C.1.

## WEATHER WISDOM

L. P. SMITH, B.A.

*Meteorological Office, Air Ministry*

Most of us are amateur meteorologists at heart, delighted to be offered an opportunity of prophesying tomorrow's weather on the basis of some local phenomenon or jingle learned long ago. But how reliable are these ancient rhymes and beliefs?

**W**ORDS and sayings of weather wisdom are probably older than writing itself. Certainly the books of Theophrastus in Ancient Greece and Virgil in Rome contain references to maxims which we would have little difficulty in recognizing in their modern form. Relatively recent additions are due to the custom of the Middle Ages of attributing certain types of weather to the influence of various saints, such as the well-known St. Swithin. During the heyday of sailing ships much weather lore was recast into rhymes to aid the mariner's memory. The present century has added little to our stocks, except perhaps sporadic attempts to blame the atom and hydrogen bombs. These proverbs have thus persisted in one form or another for several hundreds of years and, in the face of such endurance, they cannot be dismissed out of hand. However, even if grains of truth have survived, we must remember that superstition also has almost incredible powers of longevity. There are even weather maxims which laugh at themselves, as in the old Cornish proverb:

*Those who are weather wise  
Are rarely otherwise.*

Translated into modern idiom, this corresponds to the American quip about meteorologists: "You don't have to be mad, but it sure helps".

Mad or not, wise or otherwise, it is a fascinating and almost unending task to try and assess the validity of proverbs. The task is unending, because the weather does at times fall into a settled habit in this country. For example, between about 1917 and 1944 every third year, in general, produced late spring frosts. This was a chance periodicity, not a real cause and effect; the habit did not exist before 1917, and there is no reason why it should persist any longer into the future. The real mystery is why it existed at all. If we can find a physical reason for such happenings, then we are on much surer ground.

Much of the weather lore which concerns the shape of the moon is self-contradictory. The same shape, such as the new moon on its back, is said to foretell both storm and drought. As the shape of the moon depends solely on its position relative to the earth and sun, such lack of unanimity is not surprising. Any suggestion that the new moon or the full moon changes the weather is also ruled out of court both by experience and by scientific argument. The truth of the matter is that the layman's idea of a full moon is the precise date plus or minus a day or two, and British weather, at least, tends to change about every five days anyway.

**Some Maxims Endorsed** On the other hand, maxims concerning the colour of the sun or moon are based on sound observation.

*If the sun goes pale to bed  
'Twill rain tomorrow, it is said*

is a very old saying, and probably right more often than not. In the same

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category comes the well-known "red sky at night" rhyme, which is supposed to be true in about two out of three instances. The reason for this is that the colour depends largely on the clouds in the sky, and once we are observing the clouds we are observing the important realistic aspects of the current weather. Most proverbs concerning the clouds are reasonably true. Thus it is with:

*Hen's scratchings and mare's tails  
Make tall ships carry small sails.*

The hen's scratchings are the thin, wispy cirrus clouds which often precede a vigorous depression. Even if a sailor or countryman does not know why certain clouds are formed, he at least remembers the type of weather which usually follows their appearance.

Observations of the wind direction and the weather are also predominantly sound, for, as Bacon said, "Every wind has its weather". Naturally, much of the lore concerning wind pertains to the sailor rather than the shepherd, but there are many local sayings in this country which refer to wind direction. They say in Shropshire, for example, referring to the weathercock on Drayton Church:

*When the cock has his neb in Hodnet Hole,  
Look out for rain.*

Hodnet lies south-west of Drayton, and a south-westerly wind is generally rain-bearing before long.

Visibility, too, has played its part in the framing of weather wisdom. "The farther the sight, the nearer the rain" is an old Greek adage, but advice such as:

*When the Lizard is clear  
Rain is near*

is fairly common, and almost every county in Britain has its own local lore about distant hills or church steeples. When you can see them, rain is coming; when you cannot, it's already raining! The reason for this kind of belief is that unusually clear visibility generally accompanies a north-westerly wind during a ridge of high pressure, after the showers of the previous depression have cleared the air of haze and dust. A ridge of high pressure is generally short-lived and is usually followed by another depression and further rain.

**Animals and Plants Unreliable** Observations similarly based on natural phenomena are thus fairly dependable guides, but when we consider the proverbs concerning the behaviour of animals we find that there is a general tendency to attribute far too high a degree of intelligence and prescience to the animal kingdom. Birds, beasts, and fish react very quickly and sensitively to ambient weather conditions. The smaller the animal or insect, the greater its sensitivity; even its existence is determined by the current weather. Stags and hinds ranging in the deer forests of Scotland move out of the valleys up to the hills as the day gets hotter. They do this, not to avoid the high temperature, but to avoid the flies which become active in the heat of the day. It is probably merely wishful thinking among animal lovers that makes humans credit an animal with powers of forecasting. If one type of animal reacts in an unusual way to certain types of weather, and if such weather is often followed by rain, then it is all too easy to suggest that the animal is forecasting rain by

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its behaviour. But even if the rain did not follow, the animal would still react in the same way given the same conditions.

An even more far-fetched example of wishful thinking is to infer weather changes, generally on a seasonal basis, from the habits of plants and trees. Plants and vegetable matter are integrators and indicators of past and present weather. Although the weather of one day has some bearing on the weather of the next, the weather of one season has very little effect on the subsequent season, except that, in this country, the weather generally tends to return towards the average, so that, for example, a spell of dry weather does not continue indefinitely. Any suggestion that a lot of berries indicates a severe winter is thus strongly suspect, but early fruit blossom indicating a bad fruit year is sound common sense, for early blossoming means increased risk of frost damage.

**Monthly Wisdom** The fear of premature growth is common to many countries: Spain says that January flowers do not swell the granary; Portugal holds that January blossoms fill no man's cellar; while Scotland avers uncompromisingly that "A January spring is worth naething"; and in Wales,

*The Welshman had rather see his dam on the bier  
Than a fair Februeer.*

Monthly wisdom, such as this, especially when it refers to crop yields and prospects, was the ancients' equivalent of the modern correlation coefficient. It was mainly true, because the effect of the weather had already been registered on the crop, and subsequent weather had little effect.

*A peck of March dust is worth a king's ransom*

and

*A peck of March dust and a shower in May  
Make the corn green and the fields gay*

were amply proved in 1953. March dust means early spring cultivation, a good seedbed and a first-class start to the growing year, even on the cold clays. On the reverse side, France holds that:

*A wet March makes a sad harvest  
March wind spoils more than clothes.*

Rain later in the year gets a much warmer welcome from the wiseacres. "April has thirty days; if it rained for thirty-one, no harm would be done": "April's rain is worth David's chariot": "A wet May makes a big load of hay": and many more show the appreciation of the need for rain to help growth. It is only when haymaking and harvest times come round that rain ceases to be welcome.

**Saintly Weather** I mentioned earlier the type of medieval weather lore which ties the weather to certain indicator days, especially those associated with the saints. Most of these ultra-precise proverbs are ill-founded, but the widespread idea of the three "ice saints" in May is a case where folk memory is not entirely at fault. Their effective days are often taken to be May 11-13, and it is interesting to note that they are a day later in southern Germany, as compared with the north of that country, which suggests that they are not unconnected with the idea of cold air moving south. Such a spell of cold, with night frosts, often occurs some time in early May, so although we reject the dates, we can accept the danger period.

## WEATHER WISDOM

Whole books could be written, and, in fact have been written, on this subject. Probably one of the best is *Weather Lore* by Richard Inwards\*, published for the Royal Meteorological Society, London, from which many of the above sayings have been taken. As we have seen, sound weather wisdom is hard to come by, but for farming at any rate it is precious enough to be worth while taking thought and trouble to acquire.

(Professor G. H. T. Kimble's book, *The Weather*, published by Penguin Books Ltd., was reviewed in the June 1952 issue of this JOURNAL—Editor.)

## THE CATTLE OF BRITAIN

### 7. GALLOWAY

THE earliest substantial written references to Galloways are contained in the Agricultural Reviews for the County of Dumfries, the Stewartry of Kirkcudbright, and the Shire of Wigtown, which together comprise the district of Galloway in south-west Scotland. It is clear from these Reviews, which were published at the end of the eighteenth century, that by that time Galloway cattle were a distinct and separate breed with certain definite characteristics and qualities, were regarded as being of very ancient origin, and enjoyed a very considerable reputation, not only in Scotland and the north of England, but also in Norfolk and the surrounding counties, where they were in great demand for fattening for Smithfield market.

The characteristics and qualities which distinguished Galloways one hundred and fifty years ago were those demanded by the conditions of climate and land under which they were bred and reared, and they are exactly those which are of paramount importance today. This doubtless accounts for the ever-increasing popularity of the breed. It is these qualities which make Galloways the ideal cattle for the production of beef from the hill and marginal land of the country, and consequently make them vital to the present agricultural economy, which demands greater output of home-produced beef, a large part of which must necessarily come from the hill and marginal land.

Galloways are hardy hill beef cattle, black or dun in colour, naturally polled, and with a generally rugged appearance which is emphasized by their thick, rough coats. They are very hardy and can be outwintered in any part of the country, provided they have a little natural shelter and are adequately foddered. They are good "rustlers" and will graze over the whole of the area available to them, eating the rougher pasture and keeping it down so that the smaller, sweeter grasses are available for the sheep—an important characteristic in hill cattle. They will thrive and grow on hill land so poor and so high that other breeds can barely survive. They are very healthy, long-lived and are regular breeders, and, finally, they produce a carcass of the very highest quality.

Galloways are very easily managed, but this fact should not cause them to be neglected altogether, as is done by some owners to the detriment of their own pockets and the reputation of the breed. The cows calve in the

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\* Fourth edition, 1950, published by Rider and Co., price 15s.

## THE CATTLE OF BRITAIN

early spring and suckle their calves, which are weaned in the autumn. It is sound policy to tie the calves for ten days or a fortnight after weaning, as this early restraint makes them easier to handle in future. Winter management is important; the cows must be foddered with hay or oat straw (preferably hay) during the months when there is no growth of herbage (December-April on most hill farms). Between 15 and 20 cwt. of hay per cow is a safe provision for a bad winter and a backward spring. If the calves are retained and not sold at the suckled calf sales, it is vital that they should be well wintered so that they do not lose their calf flesh and are kept growing on and thriving. As with all breeds, Galloways will amply repay in size and condition any extra feeding and care which may be provided for them.

The quality which most impressed the early writers on Galloways was what they described as "their uncommon tendency to feed and lay on flesh in the most valuable parts," and this quality is fully retained at the present day. A distinction must, however, be drawn between cattle which are bred and reared on hill and rough land and those which enjoy better conditions and good feeding land. Galloways which are raised on a higher plane can compete on a weight-for-age and quality basis with any other breeds, as their successes on the hoof and on the hook at Smithfield and other fatstock shows have frequently demonstrated. Nevertheless, the fundamental importance of the breed lies in the fact that they will "feed and lay on flesh" on poor land. Cattle bred and reared in this way of necessity take a little longer to come to maturity, and this must be accepted, since it is only hill breeds such as Galloways and their crosses which enable this type of land to be utilized at all for the production of beef.

The Galloway Cattle Society was formed in 1877; the first volume of the Herd Book was published then, and it has been published annually ever since. In 1945 the Herd Book was opened to pure-bred but unregistered females whose female descendants could be graded up to pedigree status after inspection and registration in two preliminary Appendices. Entry to the first of these Appendices was closed in September 1947, and the Herd Book is once again limited to cattle out of registered dams and got by registered sires. The Society has now some five hundred members, and the last volume of the Herd Book contained the entries of over 1,800 females and 550 bulls. These figures show that during the last ten years the membership of the Society has nearly doubled, while the number of females entered has trebled.

There has recently been a steady increase in the popularity of Galloways, with the result that for some time there were not enough cattle available to meet the demand for them, and prices were unnaturally enhanced. But, as is shown by the Herd Book figures quoted earlier, the number of pure-bred Galloways is rapidly increasing, and a better balance between supply and demand has been achieved. In addition to the growth of the breed in its native district, it has also spread, and is still spreading, into parts of the country in which it was previously unknown and where there are large areas of land for which Galloways are the ideal cattle. There seems, therefore, to be little reason to doubt that the present demand will continue and increase for many years to come as the qualities and potentialities of Galloways become better known and appreciated.

Donald M. McQueen,  
*Secretary,*  
Galloway Cattle Society

## THE CATTLE OF BRITAIN

### 8. BELTED GALLOWAY

**I**T has been said with truth that the origin of the Belted Galloway is lost in the mists of time. What we do know is that the Beltie has been known in Galloway from the earliest days, and is not only the most beautiful of our native breeds, but stands pre-eminent as a breed of hardy beef cattle.

The recognized colours are black with a brownish tinge and a white belt completely encircling the body between the shoulders and the hooks, or dun with a similar belt. A good head is considered most important, and it should be wide and short with the crown low and rounded, not peaked, as in the Aberdeen-Angus. The nostrils should be wide, and the eye large and prominent; the ear moderate in length, broad, pointing forwards and upwards, with a fringe of long hairs. The neck should be fairly long, clean and fitting well into the shoulders. The body should be deep and rounded, shoulders fine and straight, breast full and deep, back and rump straight, ribs well sprung and deep, hindquarters long, flank deep and full. The thighs should be deep and fairly straight, legs short and clean with fine bone, tail well set on. The skin should be mellow and moderately thick and covered with soft, wavy hair with a mossy undercoat, which has been likened to a "mackintosh and cardigan". Hard, wiry hair and no undercoat are objectionable.

There are some people who suppose that the Belted Galloway is merely a fancy breed which is only kept in gentlemen's parks, but in this supposition they are entirely wrong. A glance at the Herd Book will soon reveal how many herds are kept by hill farmers. These men are breeding their cattle on poor land and in severe weather conditions, producing excellent store cattle to be finished off as the finest of beef on lowland farms. Many of these hill farmers never house their cattle at any time of the year and it is not uncommon for calves to be born outside in the snow. In these hard conditions a Beltie will develop economically and fatten readily when the time comes for him to be finished off, producing a first-class butcher's animal yielding a high percentage of dead to live weight, the carcass having the beautifully marbled appearance which is so much sought after. Although animals reared on these hill and marginal farms are naturally slow maturing, this is not the case with those bred, grazed and fed on high-class land.

The adaptability of the Belted Galloway is well known. With their winter coats and hardy constitution, they are eminently suited to the exposed, damp and cold hill grazings in our country, yet when exported to a hot country they will acclimatize themselves to the new conditions and shed their long coat, as is proved by their thriving in the Entre Rios district of the Argentine.

The cows of the breed have always been noted for a good flow of milk, and there is never any question of their not being able to suckle their calves or do them well. This is important these days when people are prepared to pay a premium for suckled calves.

The bulls are very prepotent and will stamp the breed characteristics on any crossed descendants. A cross with any other breed almost invariably produces a polled, black and belted calf. If anyone wants a bull for colour-marking calves, there is none better than the Belted Galloway. I have seen crosses with Ayrshire, Jersey, Shorthorn and Hereford which all resulted in belted, polled calves. This belted characteristic is also very

## THE CATTLE OF BRITAIN

persistent and will go on for generations after a Belted Galloway bull has ceased to be used.

These characteristics of prepotency and persistence have done the breed some harm; for people who are ignorant of these facts or who wish to disparage the breed have passed off any beast with a white belt as a "Beltie". Any wretched cross-bred with a belt may be described rightly enough, I suppose, as a "Beltie," inasmuch as it has a belt, but this by no means makes it a Belted Galloway.

Since the war Belted Galloway bulls and heifers have been exported to the Argentine, Brazil, Canada, Kenya, New Zealand and the United States of America. They seem to have done well in New Zealand, both in the North and South Islands, where they are most suitable cattle for producing high quality beef from the upland country and marginal land. Of course, their inherent characteristics of foraging for themselves and eating up roughage, in addition to their hardiness and excellent constitutions, make them suitable for this purpose. They are also larger animals than the other British hardy beef cattle, and the New Zealanders find this an advantage. Bulls bred out there have sold well, and carefully controlled experiments are being made in using them for crossing purposes. Reports from the U.S.A. indicate that they are thriving there and that they do well even in the severest of weather.

The pedigree breeders find it impossible to supply the demand for in-calf heifers, either in this country or for export. Their object, therefore, is not only to improve the quality of their cattle, but to increase the size of their herds and cater particularly for the export market.

In conclusion, I would add that every pedigree Belted Galloway herd in the country is attested, so prospective buyers need not worry about tuberculosis.

Lord David Stuart,  
President,  
Belted Galloway Cattle Society

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## OFFICIALLY APPROVED CROP PROTECTION PRODUCTS

Since the date of the list published in the August 1953 issue of AGRICULTURE (p. 241) the following names of proprietary products have been added to the Approved List under the Ministry's Crop Protection Products Approval Scheme.

<b>Lead Arsenate Powders :</b>		
Vitax Lead Arsenate	Vitax Ltd.	A.481
<b>Derris Dusts :</b>		
Pearson's Derris Powder	Pearson's Antiseptic Co. Ltd.	G.462
<b>Derris Sprays :</b>		
Murphy Liquid Derris	The Murphy Chemical Co. Ltd.	H.485
Pearson's Liquid Derris	Pearson's Antiseptic Co. Ltd.	H.458
<b>Nicotine Sprays :</b>		
Pearson's Liquid Nicotine	Pearson's Antiseptic Co. Ltd.	P.461
<b>Sulphur Dusts :</b>		
Berk's Dusting Sulphur	F. W. Berk & Co. Ltd.	AA.519
<b>DDT Dusts :</b>		
Pearson's DDT Dust	Pearson's Antiseptic Co. Ltd.	AD.459
P.P. 5% DDT Dust	Plant Protection Ltd.	AD.509
<b>DDT Sprays :</b>		
Vitax 20% Dispersible DDT	Vitax Ltd.	AE.480
<b>BHC Dusts :</b>		
Pearson's Flea Beetle Dust	Pearson's Antiseptic Co. Ltd.	AK.460
Vitax Wireworm Dust	Vitax Ltd.	AL.478
<b>DNC-Petroleum Winter Washes :</b>		
Edwent Dinitro-ortho-cresol 1-3	J. M. Stokes Ltd.	AZ.524
Winter Wash		
<b>Calomel Dusts :</b>		
Vitax 4% Calomel Dust	Vitax Ltd.	BB.476
<b>Metaldehyde Slug Baits :</b>		
Vitax Slug Killer	Vitax Ltd.	BC.475
<b>Sodium Chlorate :</b>		
P.B.I. Chlorate Weedkiller	Pan Britannica Industries Ltd.	BG.355
<b>MCPA (4-chloro-2-methylphenoxyacetic acid)</b>		
<b>Sodium Salt Dusts :</b>		
Shell M Dust (1%)	Shell Chemicals Ltd.	BH.427
Vigon MC Dust	Vitax	BH.483
<b>MCPA (4-chloro-2-methyl phenoxyacetic acid)</b>		
<b>Sodium salt Sprays :</b>		
Blitzweed	Vigzol Oil Co. Ltd.	BJ.537
<b>2,4-D (2, 4-Dichlorophenoxyacetic acid)</b>		
<b>Amine Salt Sprays :</b>		
Dipac 2, 4-D Spray	Pan Britannica Industries Ltd.	BM.356
<b>2,4-D-(2, 4-Dichlorophenoxyacetic acid)</b>		
<b>Ester Sprays :</b>		
Dicotox 40 (wheat, barley and grassland)	May & Baker Ltd.	BP.515
Phordester (winter wheat and barley, and grassland)	Pest Control Ltd.	BP.498
<b>DDT Smokes :</b>		
Murfume DDT Smoke	The Murphy Chemical Co. Ltd.	CF.503

## OFFICIALLY APPROVED CROP PROTECTION PRODUCTS

### **BHC Smokes :**

Agroicide Smoke Pellets  
Murfume BHC Smoke  
(Generators and Pellets)  
Murfume Lindex Smoke  
(Generators and Pellets)

Plant Protection Ltd. CG.510  
The Murphy Chemical Co. Ltd. CG.502

The Murphy Chemical Co. Ltd. CG.505

*Products bearing the reference numbers D 168, H 78, J 98, K 328, M 425, AE 348, BB 251, and BJ 422 have been withdrawn by the manufacturers.*

Applications are now invited for the official approval of proprietary azobenzene smokes, organo-mercury lead arsenate sprays, sprays based on the amine salts of MCPA (4-chloro-2-methylphenoxyacetic acid) and copper-petroleum oil sprays.

A booklet giving a list of approved crop protection materials may be obtained free on application to the Ministry of Agriculture and Fisheries (Publications), Chester Terrace, Regent's Park, London, N.W.1.

*Ministry of Agriculture and Fisheries, Plant Pathology Laboratory,  
Harpenden, Herts. April 1954.*

## FARMING AFFAIRS

**Fatstock Marketing** From July 1 farmers will be free to sell their fatstock to anyone, anywhere, any way, they wish and so get the best prices they can. Quality in production is therefore, from now on, going to be supremely important. There will, however, be a Fatstock Guarantee Scheme to implement the Government's obligation to farmers under the Agriculture Act, 1947, and every stock farmer should, in his own interests, make sure that he thoroughly understands how the scheme will operate. The classes of stock covered by the scheme are: steers, heifers, special young cows and other good quality cows, clean sheep and lambs, and clean pigs. Briefly, to take advantage of the price guarantee farmers must get their stock "certified" by the Ministry of Food at an approved fatstock market, slaughterhouse, or bacon factory.

Certification means having the animals examined to ensure that they are eligible, getting them graded and weighed if necessary, and marked after sale to prevent their being presented for the guarantee again.

The guarantees may be both *collective* and *individual*. The collective guarantee ensures that the average returns to fatstock producers as a whole do not fall below the Standard Prices fixed at the Annual Review. If the average market prices for clean cattle, or cows, or sheep or pigs are *less* than the Standard Price, a collective guarantee payment will be made to all producers selling that type of stock. The individual guarantee protects farmers against the risk of wide price variations at auction sales. Clean cattle and S.Y.C.s, sheep and pigs sold by auction (but not otherwise) will be covered by guaranteed individual prices as well as by the collective guarantee. If the auction price is *less* than the guaranteed individual price, then the Government will make up the difference.

A simple explanation of the scheme is given in the illustrated Fatstock Guarantee Scheme leaflet, and full details are set out in the Farmers' Guides to the scheme, separately for cattle, sheep and pigs. All four

leaflets are available free from your local market, County Committee office, N.F.U. Branch or from this Ministry (Chester Terrace, Regent's Park, London, N.W.1).

**Chemical Control of Wheat Bulb Fly** Compared with the damage caused in 1953, this year's attacks of Wheat Bulb fly have been light. Nevertheless, in certain areas many crops, especially late-sown ones, have been thinned, and there is still great interest in chemical methods of control. One of the possible methods mentioned in an earlier article in this JOURNAL by one of us\* was the spraying of the preceding crop with the object of killing the flies before they laid their eggs. This method was tested extensively last year and, as some farmers may be contemplating its use in 1954, a preliminary report of the results is given here.

The trials were all carried out on fields on commercial farms in the fenland areas of East Anglia and in parts of Lincolnshire. The crops were mostly potatoes, but there were four fields of sugar beet and two of peas. Because of the probable tendency of the female flies to wander at random, perhaps even after coming in contact with the insecticide, it was decided to treat a large area in each field rather than a number of small plots. Normally half the field was sprayed or dusted, unless it was very large, when only 5-7 acres were treated. The time of application was chosen to coincide with the beginning of egg laying, which, in 1953, was about the third week of July. Usually a second application was made two or three weeks later, and it was hoped that the foliage would remain toxic to the flies during the main period of egg laying.

The materials used were:

1. 5 per cent DDT dust at about 40 lb./acre.
2. 20 per cent wettable DDT at 5 lb. in 50-60 gal./acre.
3. 17 per cent DDT emulsion at 5 pints in 50-100 gal./acre.
4. 18 per cent DDT miscible liquid at 3 pints in 3-60 gal./acre.
5. 14 per cent dieldrin dust at 34-40 lb./acre.
6. 15 per cent dieldrin miscible liquid at 2½-3 pints in 3-100 gal./acre.
7. 100 per cent chlordane miscible liquid (10 lb. chlordane/gal. solvent) at ½-1 pint in 25-100 gal./acre.

A minimum of six fields for each treatment was aimed at, but this was not always achieved, and some treated fields were not sown to wheat or, for some reason, could not be followed through.

The treatments were applied both by farmers' and contractors' machines. In a few fields the DDT and dieldrin miscible liquids were applied by a fixed wing aeroplane at the rate of 3 gallons per acre. In potato crops the insecticide was usually combined with the blight spray.

Two methods of assessment were used. In November and December twenty 4-inch soil cores to a depth of 6-8 inches were taken on each of the treated and untreated parts of each field, and were examined for Wheat Bulb fly eggs by a flotation method. Then in March or early April shoots attacked by Wheat Bulb fly (equivalent to a count of larvae) were counted on twenty areas in each part of each field. Unfortunately, time did not permit shoot counts on all fields. Visual inspections were made in April and May on many fields, but no marked differences could be detected.

The results are shown in the table below as the number of fields with a "positive" or "negative" result. For want of a better method in the space available, the fields are classified according to whether the count of eggs or larvae on the treated part was *markedly less* than the count on the untreated

\* The Problem of the Wheat Bulb Fly. H. C. GOUGH. *Agriculture*, 1953, 60, 315-20.

## FARMING AFFAIRS

part. The trials were not designed to reveal statistically significant differences and the "positive" criterion has been taken as 50 per cent control, which is the minimum figure likely to be of commercial value.

TREATMENT	EGGS No. of Fields		DAMAGED SHOOTS No. of Fields	
	Positive	Negative	Positive	Negative
DDT dust	3	2	0	2
DDT wettable powder	0	4	0	4
DDT emulsion	5(4)	9	2(2)	8
DDT miscible liquid	1	6	1(1)	0
Dieldrin dust	0	4	0	2
Dieldrin miscible liquid	2(1)	13	2(2)	10
Chlordane	0	3	0	1
<b>Total</b>	<b>11(5)</b>	<b>41</b>	<b>5(5)</b>	<b>27</b>

Figures in brackets indicate the number of fields included in the total where, because of low populations, the 50 per cent "control" is not likely to represent a statistically significant difference.

A glance at the figures shows that the treatments have not differed from the controls in a sufficient number of instances for the method to be of commercial value. It is perhaps remarkable that the application of quantities of highly toxic materials should have produced so little effect. There is some evidence that egg laying in 1953 was rather prolonged, and perhaps in a season when it is more limited the method might be more effective; many eggs may also be laid after the flies have come in contact with the insecticide but before they are killed. Nevertheless, the present conclusion must be that this method is not worth pursuing until a lot more information is available on the habits of the adult flies.

Work on other methods of control is being continued by the National Agricultural Advisory Service under a grant from the Agricultural Research Council. Seed dressing appears to offer some promise under certain circumstances, but it is doubtful if practical recommendations can be made in time for next season, though it is hoped to issue a report on this work later in the year.

Thanks are due to the many farmers who co-operated in these trials and to many of our colleagues who assisted in the work.

H. C. Gough and M. Cohen

**Farming Cameo:** The Chilterns district consists of a little over 83,000 acres of agricultural land in the southern half of Buckinghamshire. It is bounded on the north by the steep slopes of the famous chalk hills as they fall away to the fertile Vale of Aylesbury, roughly along the old Icknield Way, while to the east and west the district is defined by the boundaries of Hertfordshire and Oxfordshire. The River Thames between Henley and Bourne End forms a natural limit in the south, and thence the boundary runs eastward to the Hertfordshire border beyond Chalfont St. Peter.

The soils of the Chilterns are broadly related either to the clay with flints cap, which may extend to a depth of 50 feet, or to the underlying chalk which appears on the hill slopes. There are small areas of Gault Clay, valley and plateau gravel near Princes Risborough, the Thames valley and Beaconsfield respectively, but potash is generally low and a good response to complete fertilizer is obtained. Ley farming is extensively practised and is restricted only by such factors as unfenced, unwatered fields adjacent to

## FARMING AFFAIRS

large beech woods, or by slopes too steep and poor to plough. Even so, well over 60 per cent of the area is under crops and temporary grass.

Although the district is recovering well from a period of war-time cereal cropping, a policy of more intensive stocking is maintaining the cereal area at over 25,000 acres. It is a pity that, although a number of towns grew around local industries, there is not within the district a truly agricultural market holding regular attested cattle sales. The one-time rural craft of chair-making, now housed along with other light industry in modern factories around High Wycombe, nowadays offers serious competition for labour.

Farmers also have to contend with an acute pest problem in the shape of rooks, pigeons, rabbits, and deer, which find the heavily wooded terrain an ideal sanctuary.

The Chilterns farmer is forced by circumstances to adopt a progressive attitude towards his task and is ready to exploit new methods of cropping, utilization and storage. With cattle numbers over 25,000, dairying is the major livestock enterprise, and the population of milking cows is steadily increasing. Herds of most breeds are to be found, but there is a predominance of those able to produce efficiently under the rather rigorous conditions. At present, almost two-thirds of the dairy herds hold T.T. licences. Recently, "round-the-year" grazing, provided by special-purpose leys and forage crops of kale or rape, has become established practice. Such a cheap system of feeding fits into the ley farming picture, especially when associated with strip-grazing and milking bails. Whereas in the past sheep played an important part in maintaining fertility, the present total of just over 8,000 tells its own story. Dogs are a serious menace, and breeding flocks are still being reduced, but a few more sheep are being kept as scavengers behind a dairy herd or on the chalk banks.

Pig numbers of over 21,000 have more than doubled during the last four years and, together with poultry in hen-yards, have helped to intensify the farming system. The breeding stock of pigs has increased faster than any, and the sale of strong Large White x Wessex stores to swill feeders has proved particularly lucrative to many breeders. There are remarkably few farms with a sizable fattening unit. In addition to the farm poultry, there are some specialist hatcheries and large turkey farms of repute.

The Chilterns district also makes an important contribution in the horticultural field. In particular, there are 600 acres of cherry orchards around Prestwood and Holmer Green on the well-drained clay with flints over chalk. On the alluvium and gravel of the Thames valley between Marlow and Bourne End are the extensive market gardens of two leading growers. Mention must also be made of the old-established watercress beds at Bourne End, and of others, now being modernized, in the Chesham area.

A. W. Mardon,  
*District Advisory Officer*

**The Mechanic on the Farm:** Grindstones, grinding wheels, abrasive stones, files, and oilstones are all likely to be required for sharpening hand tools and the knives in field implements and machines. When mower knife or plain reaper binder sections are being sharpened by reaper file or abrasive stone, the most important thing is to see that the knife is held firmly so that the file or stone can be kept accurately to the correct angle. A portable clamp stand is worth buying for this purpose. It is essential that the original slope and

## FARMING AFFAIRS

bevel of the section should be maintained. The same amount must be taken off the full length of the section; otherwise the angle of cutting will change and poor work will result. It is sometimes difficult to maintain the correct angle of the section, the tendency being for the triangle to be sharpened away too much at the point and too little at the heel. This changes the angle of cut, and the crop tends to slide forward on the section instead of being cut. The most likely fault in the shape of bevel is that it is made too short; this necessitates frequent resharpening.

A small grinding wheel can be used to sharpen mower sections, and there are special machines which incorporate a clamp to hold the spindle of a wheel at the correct angle. Hand-turned models are made for use in the field, and electrically-driven machines for the workshop.

Twine knives on binders and balers are best sharpened by an abrasive stone, but billhooks and scythes are usually sharpened on whetstones. If grinding is needed, a wet grindstone can be used.

The workshop tools themselves need to be kept sharp. Chisels should be ground first on a wet grindstone and then sharpened on a medium-grade oilstone. Plane blades, unless they are very badly notched, need only an oilstone. The oilstone itself should be kept clean and moist, since it hardens when allowed to dry. When the stone is being put away, dirty oil should be wiped off with a rag and a few drops of olive oil or mineral oil should be put on it.

Drastic grinding may generate enough heat to change the hardness of the steel, so that the tool needs to be retempered before it is taken back into use. Most steels can be hardened and retempered if they are heated gradually to a cherry red colour and then cooled very quickly by quenching in water or oil. Tempering is done by heating the hardened steel very carefully until its proper temper colour shows on it, and then quenching it. In the farm workshop it is best to avoid as far as possible having to harden and temper metal. For instance when a cutting edge is being ground against a wheel, the tool should not be left in contact with the wheel for long; the grinding should be done in several stages, with intervals for cooling. The cooling can be hastened by dipping the tool in water.

H. J. Hine

**Bath and West at Exeter** The premier show of the West Country opened in almost perfect weather on a 60 acre site at Whipton, Exeter on June 2. The total gate for the four days was roughly 170,000, compared with 112,400 at Bath, last year. The growing interest in beef was clearly reflected, both in the number of entries of beef and dual-purpose cattle and in their quality. The production of good quality beef—and it is important these days that efficiency and economy should go hand in hand at every stage of the production process—was indeed the main theme of the Ministry's own exhibit.

It was to be expected, of course, that the Devon breeds would be out in force. The "Red Rubies" of N. Devon topped the poll with 90 entries; the dual-purpose South Devons made 78. The Coronation Cup awarded for the best animal in the Devon classes went to the bull "Uggaton Highwayman" from the herd belonging to Cecil Brent and Son (Callington, Cornwall). Mr. John Irish's "Pamfiere General 25th" (Modbury, S. Devon) again secured the South Devon Championship. This bull is already demonstrating his qualities as a sire, since two of his daughters were also shown, one of

## FARMING AFFAIRS

them capturing the female and reserve supreme championships, and the two of them, with their sire, also took the group prize.

The sheep entries, totalling 425, and among which the Dorset Downs distinguished themselves, foreshadowed the renewed interest which may bring this class of stock back into its traditional importance. Among the 387 pig entries, the Large Whites and the Wessex Saddlebacks had a successful day.

The Society's innovation of the £50,000 electric power house for the supply of current and hot water to exhibitors was greatly appreciated and attracted unremitting attention by visitors.

It was a very happy choice by the Society to select Exeter as the venue for its 1954 show, after a period of 45 years, and well merits the success which has unquestionably attended it.

**Three Counties Show at Gloucester** The weather was less kind to the Three Counties Show held at Staverton Airport, June 8-10. Any prize for the most prolific exhibit would have to be awarded to the mud, which despite hundreds of tons of straw, became ubiquitous, after the weekend's rain. Nevertheless, the attendance was very good—31,291 for the three days. The collaborating three counties are Hereford, Gloucester and Worcester, and it is unquestionable that, despite the handicap of appalling weather, the Society put on a magnificent show.

In this area, of course, Hereford cattle were to the fore; the Vern herd of Capt. R. S. de Q. Quincey (Marden, Hereford) capturing the supreme herd championship with the 13-months-old bull "Vern Flook"—the youngest ever to get this award. This young bull is the son of "Vern Diamond" which, it will be remembered, was exported to Wyoming eighteen months ago and fetched the record price of £16,000.

Jerseys also had a strong entry, reflecting the headway which this breed is making in the west country; and the Dairy Shorthorns and Friesians, too, were well in evidence and of good quality.

The sheep population in the three counties is still some 18 per cent less than it was before the war, but the light breed classes were well represented with a good showing of Oxford Downs and Suffolks.

The Ministry's exhibit showed very clearly the road by which sheep may make their comeback in the west, fitting into dairy or mixed farms with little or no disruption of the existing enterprise. The Ministry of Food's exhibit of freshly killed lamb carcasses (none of the animals were more than 16 weeks old) stressed the ideal weight for a carcass to meet the kind of demand that may be expected with the end of meat rationing; 34-46 lb. should be the aim.

## BOOK REVIEWS

**Vegetable Tanning Materials.** F. N. HOWES. Butterworth's Scientific Publications. 35s.

The craft of the tanner holds a peculiar interest for every farmer, for nearly all the hides that are tanned come from farm livestock, while leather, whether as boots or harness, is essential for work on the land. Less than a hundred years ago, English hides went no further than the nearest country town to be treated with English oak bark. But today, though a few such rural tanneries survive, the industry has become highly technical, depending on a wide range of vegetable and chemical materials drawn from all over the world. Dr. Howes now summarizes our knowledge of the vegetable tannins - barks, woods, fruits, leaves, roots, and galls - giving in detail their botanical classification, country of origin, tannin content, and suitability for producing various kinds of leather. This is a volume in the best Kew tradition of economic or applied botany; and the author is as much concerned with the local uses of particular plants - often by primitive peoples - as with those of major commercial importance.

Oak bark is the only British tanning material still exploited commercially, and, today, stripping - which can be done only in spring - is restricted to mature trees, ripe for felling, in the south of England. In the past, great areas of coppice oak were cut for bark and charcoal at regular intervals in all our upland regions, and the resulting oak scrub still persists; as recently as 1947, coppice oak was still being barked in the Lake District. Other common forest trees that could in an emergency give us useful tannins, are: Norway spruce, Sitka spruce, hemlock, larch, pines, willow, birch, alder, and sweet chestnut; all have been used for this purpose at some time in Europe or North America. The roots of common docks and sea lavender also hold tannins. The wealth of tropical materials, many of which reach our tanneries in the form of extracts, is suggested by such names as quebracho, avaram, valonea, algarobilla, and divi-divi.

H.L.E.

**The Ryegrasses in British Agriculture. A Survey.** A. R. BEDDOWS. Bulletin Series H. No. 17. The University College of Wales. 5s.

There are many references to grass in the agricultural history books, few to the individual species of grass and the particular part they have played in the general development of our pastures. This detailed study of the history of the ryegrasses in Britain is, therefore, welcome for its theme - it is, indeed, a pioneer effort. But it is also welcome for its character, since it is a first-class piece of technical history. It tells a story never before laid on readily available record; it tells it carefully, precisely and thoughtfully; and the manner of its presentation makes it a model for any future monographs of this type.

Mr. Beddows, who is head of the Grass Breeding Department of the Welsh Plant Breeding Station, traces the history in this country of perennial ryegrass and Italian ryegrass, the former from the earliest literary references to its existence which occur in the seventeenth century, the latter from its introduction to Scotland in 1831. He describes the properties of these plants, the manner in which they have been used in the course of agricultural development and the various ways in which men have striven to improve and exploit them for their particular purposes. Consequently, we meet in his tale the plant breeder and the seed merchant as well as the more familiar "improving landlord," cultivator and stockman. Indeed, the migration of research from the field to the laboratory, from the private individual to the public institution, is one of the incidental themes of this book; the work of Pacey the farmer was continued first by Sinclair, the scientific protégé of a great farming landowner, and then by such "professional" scientists as Stapledon. Thus does this monograph illustrate in specialized form more general trends in agricultural history, showing with detail and clarity the various factors, technical, economic and agricultural, which go to the making and use of those complicated vegetable tools we call crops.

It is pleasant to read a book which so authoritatively combines scientific, agricultural and historical knowledge with exceptional editorial skill. It is pleasanter still to see that a similar book by the same author on the history of cocksfoot, timothy and meadow fescue is now in preparation and should shortly be available.

N.H.

## BOOK REVIEWS

OX **The Potato in Health and Disease** (3rd Edition). T. WHITEHEAD, T. P. MCINTOSH, and W. M. FINDLAY. Oliver and Boyd. 60s.

Compared with the previous edition, which was issued in 1945, the third edition of this authoritative book is nearly double the size; and with its increased scope, it can fairly lay claim to be the standard reference book on potatoes. The new edition follows the general design of the old, but all the chapters have been expanded and brought up to date. In addition, several new features have been introduced. Thus not only does the book present a comprehensive study of the potato, but it also demonstrates the tremendous amount of research work on this crop that has taken place in the past decade.

For those interested in the botanical aspect, the latest information is readily available on such subjects as the origin of the potato, when it was introduced, its systematic position, the identification of, and differences between, varieties, intricacies of breeding new varieties, and the roguing of crops. The question of cooking quality in potatoes is discussed in the light of present knowledge, but it is emphasized that much work still remains to be done on this important subject. For the more mechanically minded, there is also an interesting review of the latest trends in mechanization.

The chapters dealing with cultivation, manuring, surplus potatoes and seed potatoes comprise sound practical advice which will be appreciated by both farmers and merchants. Certain details concerning seed potatoes, such as the inspection standards and the work of the Department of Agriculture for Scotland and others on the development of virus-tested seed, are, unfortunately, not quite up to date. They may have been so when written, but the untimely death of Mr. Findlay, who was responsible for these chapters, prevented final adjustments being made.

The section on diseases and pests of the potato crop is comprehensive and contains a wealth of detail drawn from over a thousand references. The potato is, of course, notorious for the number of diseases and disorders which assail it—caused by all manner of organisms—eelworms, slugs, centipedes, insects of many kinds, numerous fungi, certain bacteria and an array of viruses. It suffers also from many diseases and conditions of uncertain origin. All are mentioned in these chapters, and most of them are discussed at length. For the student or scientist in search of details, a useful review of literature is therefore at hand. But for general purposes, this section, which occupies approximately two-thirds of the book, may well be regarded as too lengthy and discursive. Its bulkiness tends to over-emphasize the potato in disease to the detriment of the potato in health.

The book is well written, the many illustrations it contains are of a high standard, and as a source of information on innumerable aspects of the potato crop, it is unequalled. To those directly concerned with the crop, particularly scientists, merchants and seed growers, it is an indispensable work of reference.

W.B.

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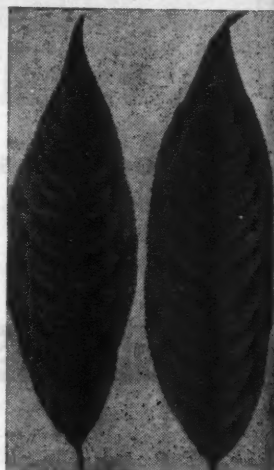


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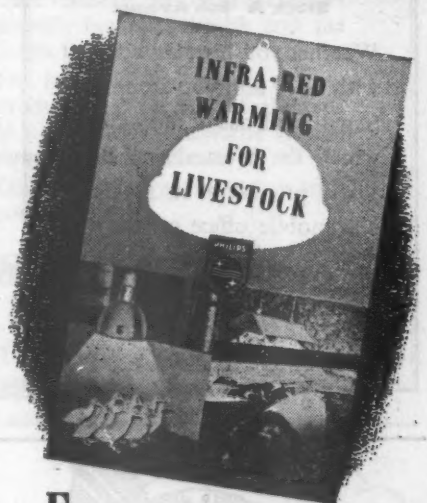
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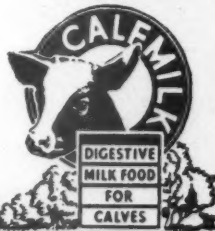


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